U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Creating Defensible Space

FOREWORD

The appearance of Oscar Newman's *Defensible Space* in 1972 signaled the establishment of a new criminological subdiscipline that has come to be called by many "Crime Prevention Through Environmental Design" or CPTED. Over the years, Mr. Newman's ideas have proven to have such significant merit in helping the Nation's citizens reclaim their urban neighborhoods that we at HUD's Office of Policy Development and Research asked him to prepare a casebook to assist public and private organizations with the implementation of Defensible Space theory. Information about this process is presented for three distinct venues: in an older, small, private urban community; in an existing public housing community; and in the context of dispersing public housing throughout a small city.

This monograph is very special because it draws directly from Mr. Newman's experience as a consulting architect. Indeed, we asked the author to share with us both his perspective on creating viable change and his personal observations on key lessons learned.

By publishing *Creating Defensible Space,* PD&R is pleased to be part of the continuing growth and evolution of Defensible Space as both a criminological concept and a proven strategy for enhancing our Nation's quality of urban life.

Michael A. Stegman
Assistant Secretary for
Policy Development and Research

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ACKNOWLEDGMENTS

Firstly, I wish to thank Henry Cisneros, the Secretary of Housing and Urban Development, for his personal support and encouragement in having me prepare these case studies. Early in his administration, he recognized the importance of our work to housing authorities and cities across the country and prepared his own essay entitled: *Defensible Space, Reducing Crime and Creating Community*. The publication has received wide acclaim and distribution. He followed this by having me conduct a series of seminars for U.S. Department of Housing and Urban Development (HUD) personnel and his key staff and Assistant Secretaries to explore how Defensible Space technology could be utilized in various HUD programs.

Michael Stegman, HUD's Assistant Secretary for Policy Development and Research, initially suggested the idea for the three case studies. He then had me meet with Margery Turner, Deputy Assistant Secretary for Research, Evaluation, and Monitoring and with Dr. Hal Holzman to define the scope of the work.

Hal Holzman served as HUD's Project Officer, but more importantly, as my mentor and muse during the entire writing effort, he encouraged me to record experiences and speak to issues I would have otherwise hesitated addressing.

In Dayton, Ray Reynolds, the city's former director of urban development (now planning director for the city of Hollywood, California) bore the full responsibility of seeing the Dayton project through from start to finish. I describe his role in my discussion of Five Oaks. Suffice it to say, the project would not have been realized without his efforts. Others who were germane to the success of the Five Oaks project were: Jaruth Durham-Jefferson, superintendent of police, who brought me to Dayton and helped me at every stage; and Patrick Donnelly, Karen DeMasi, and Bernice Ganble, all residents of the community and professionals in their own right, who served to coordinate community participation during the

planning of the project and provided insights that helped me define the plan and write the case study.

In Yonkers, Pete Smith, the director of the Yonkers Municipal Housing Authority, was my second conscience through my entire 8 years of working there. His role was difficult; as a long-time Yonkers resident, he knew everyone and identified with their concerns and resistance, but as executive director of the housing authority, he also identified with public housing residents and their plight in segregated highrise projects. He knew that what we were planning would help all public housing residents and would not be the destabilizing force everyone in the community feared. Chief of police Robert Olson (now in Minneapolis) was helpful in calming the community's nerves during the process, provided a police presence when it was needed, and had his men bring the community and public housing teenagers together when tempers flared.

Clason Point in the Bronx, New York, was our first effort in modifying public housing projects using the Defensible Space theory. Even though housing authority management was skeptical, two men took to the idea, opened doors, and provided insights and assistance that gave access to data and to sites for experimentation. They were Sam Granville, director of management, and Bernie Moses, director of maintenance, both now retired.

Within our offices, Joanna King, who has served as our institute's administrator and my trusted editor for 20 years, continued her critical work in helping me produce this book. Allen Christianson, architect, prepared the final illustrations from my sketches, as he has in my previous books.

Oscar Newman
Hensonville, New York
April 1996

INTRODUCTION

The struggle to preserve our urban communities is fierce and on-going. On behalf of the U.S. Department of Justice, I recently walked the streets of 50 neighborhoods in 14 different cities: Chicago, Los Angeles, Miami, Boston, Hartford, Baltimore, Seattle, Oakland, Gary, Richmond, Wilmington, Buffalo, Denver, and Fort Worth (Newman, 1994). I walked these neighborhoods with residents, mayors, governors, councilmen, and commissioners. They pointed out what was going on and discussed the cost and shame of it: small bands of drug dealers had taken over their neighborhoods, commercial districts, and housing developments. This was the situation not just in the urban core but in middle- and working-class neighborhoods all over the city. The police, acting alone, admitted they were helpless and that the criminals knew it. Residents felt isolated and unable to organize with their neighbors to do anything about it.

The unanticipated byproduct of a desirably diverse, highly mobile society, unfettered by past restraints, may be the disappearance of communally held values and the accompanying loss in civility. We always knew that the old bases for community were going: common ethnic backgrounds; shared religions; and extended families. Even the nuclear family, that once immutable core, is fast disappearing. Thirty years ago, New York's Senator Daniel Patrick Moynihan warned that the percentage of children being born to African-American mothers out of wedlock had reached catastrophic proportions. That percentage has now been equaled by whites, and the percentage for African Americans has doubled.

This lack of commonality and civility among neighbors increases our vulnerability to criminals. The price is not just fear and high crime rates, it is our withdrawal from public streets and from further communication with each other—the loss of the very cement from which social responsibility and civility is made, resulting in the abandonment of urban residential neighborhoods and of assisted housing developments. To city government, the price is a major decline in property values, the loss of its tax base, and the disappearance of commercial centers and institutions that depend on middle- and working-class users. It is also a loss of

inner-city areas that once housed a diversity of economic and racial groups. The situation has become so bad that residents in most new developments in the suburbs lock themselves up in gated communities to ensure their security.

Citizens' reaction to crime is a force so large that it is changing the shape of residential neighborhoods faster than increased numbers of police and prisons, so the cost of using Defensible Space to stop this erosion is both low and proven effective. Given the Federal Government's recent announcement that it will be reducing much of the U.S. Department of Housing and Urban Development's (HUD's) previous roles—both in mortgage guarantees and in the construction and maintenance of public housing—a simple and effective means for stabilizing existing urban communities and assisted housing seems most apropos.

Law abiding citizens and communities are the biggest untapped resource for crime prevention we have, if only we knew how to use them. If only we could find a way to empower people to control their immediate environments so that they could work with police to contain criminal activity. Defensible Space does just that, without the specter of vigilantism, and without the need for a continuous infusion of money.

Defensible Space operates by subdividing large portions of public spaces and assigning them to individuals and small groups to use and control as their own private areas. The criminal is isolated because his turf is removed. Even those criminals who live within a community or housing development, will find their movements severely restricted. Defensible Space does not automatically oust the criminal; it just renders him ineffective.

What Defensible Space also does is give low-income families a self-respect they never had before and an opportunity, in the case of our housing integration programs, to become part of the social mainstream. It gives people a new respect for the work and territory of others by giving them territory of their own to prize and to wish to see respected.

Many academics and practitioners are unfamiliar with the entire range of my work and research. Almost universally, they have assumed that the publication of *Defensible Space* (Newman, 1972) came at the end of my career rather than at the beginning. Those early studies of physical

design evolved to include also the analysis of social, managerial, and security force variables. And in addition to assisted housing, I have worked with commercial, institutional, and middle-income residential communities (see References).

From reviewing the literature that has emerged from the Crime Prevention Through Environmental Design (CPTED) movement—a spin-off of Defensible Space—I am surprised by how poorly the Defensible Space concept is understood and how often it is misused. I had always thought of my ideas as comparatively simple and down to earth. And, when explaining them, I have tried to avoid mystery and mumbo jumbo. Yet a whole cult has sprung up around these misunderstandings, with its own pseudo-language, misbegotten concepts, and rituals. After reading the literature and examining the projects that have been built in the name of CPTED and Defensible Space, I am troubled by my failure to communicate my ideas clearly.

Defensible Space is not about fencing. It is about the reassignment of physical areas and areas of responsibility—the demarcation of new spheres of influence. I have seen too many public housing projects that have simply been ringed with iron fencing with no accompanying reassignment of grounds or responsibility to residents. And when, upon analysis, the reduction of crime in such cases proves minimal or short-lived, the Defensible Space concept is blamed. Even studies abroad involving the positioning of telephone booths in the public areas of a variety of housing projects have concluded that there is no validity to the Defensible Space concept. But what such research models have to do with Defensible Space, I cannot fathom. Many social science professionals are quick to label my ideas *physical determinism,* without having taken the time either to think the matter through or to familiarize themselves with the origin of the term. Defensible Space is, of course, anything but. This has not stopped some from coining a counter-term: *social determinism*—whatever that is supposed to mean.

I try to assuage my guilt for communicating poorly by concluding that too many people, particularly practicing professionals, have limited themselves to reading only *Defensible Space* (1972), and have not followed up with my books *Community of Interest* (1980) or *Design Guidelines for Achieving Defensible Space* (1976). Unfortunately, all three

books are now out of print. Because I am less concerned with what people say than with what they do, I have not bothered responding to my critics in academia or to those in government who have found it necessary to defend their past policies and practices by attacking me. But when I visit housing projects that have been physically modified in the name of Defensible Space, at the cost of hundreds of thousands of dollars, and I find that it is all for naught because their designers have misunderstood the concept, I am mortified. This situation brings us to this effort by HUD and me to fill the vacuum.

What this book is about and who it is for

The renewed interest in Defensible Space comes from people wishing to undertake similar projects in their own communities. Having spoken to literally hundreds of residents, planners, housing officials, mayors, councilmen, and police, I have learned that what they want to know is: Were the communities that implemented Defensible Space projects similar to theirs? How were the plans prepared? What was the community's involvement in the planning process? What monies were used to implement the plans? What were the politics and mechanisms needed for ensuring that plans were actually built? And finally, what were the results?

To address this interest, Secretary Cisneros asked me to prepare three case studies of my implemented projects, each to reflect a different housing situation. Together, the three provide guidelines about how communities could improve security in all of their residential areas: innercity neighborhoods composed of single family houses and small apartment buildings, existing public housing projects, and communities involved with dispersing existing public housing into middle-income neighborhoods.

Rationale for selecting the three case studies

To meet HUD's request, I identified the following three projects:

- The reorganization of an urban grid of residential streets to create mini-neighborhoods in downtown Dayton, Ohio.
- The modification of a row-house public housing project in the South Bronx, New York City, New York.

- The dispersal of highrise public housing residents into scattered-site townhouses in middle-class neighborhoods of Yonkers, New York.

These three projects together deal with the housing problems common to all American cities. They also reflect some of the new programmatic solutions being proposed by HUD.

Case Study One: The Five Oaks community in Dayton, Ohio

The successful reorganization of the existing urban grid of streets to create mini-neighborhoods in the Five Oaks community in Dayton, Ohio, has created a trend that is now sweeping the country. This phenomenon flows from our well publicized study of the private streets of St. Louis about 20 years ago. The creation of cul-de-sacs at the end of streets is a useful mechanism not only for reducing crime and traffic, but for stimulating reinvestment and the occupancy of previously vacant units.

In Five Oaks, which is composed largely of two-family houses, this reinvestment also created newly refurbished rental units that serve Section 8 families. Given HUD's inclination to provide Section 8 rental certificates rather than to build, or rebuild, public housing, the stabilization of urban communities containing low-cost rental housing is vital to that program's success.

Additionally, many communities are planning to use their Community Development Block Grant (CDBG) funds to reorganize their street systems as Dayton did. This municipal program couples the provision of CDBG funds to communities for street modifications with a requirement that such communities also provide more rental housing in the units being rehabilitated. It can make both programs economically feasible, interdependent, and more socially acceptable.

Case Study Two: The Clason Point project, South Bronx, New York City

Clason Point, a row-house public housing project, was physically modified to reassign the previously public grounds to individual residents to use, control, and maintain. This reduced both crime and maintenance

costs. Clason Point, which is typical of about 20 percent of public housing throughout the country, was originally designed with fully open grounds that were maintained and policed by the housing authority. Eventually, the grounds became bare dirt overrun by gangs and controlled by drug dealers. I used iron fencing and curbs to reassign all the grounds to individual residents. This removed gang turf and gave the drug dealers nowhere to operate. The resurfacing of buildings and the provision of new paths, lighting, and play equipment improved the look of the project and encouraged residents to assume new responsibilities. This reduced maintenance costs and increased occupancy levels.

The funds for implementing such measures in other public housing projects are readily available from HUD. In a recent nationwide tour of such projects, I presented the work we had done in Clason Point and found residents and housing management uniformly interested in doing the same in their own housing projects.

Case Study Three: Dispersing public housing in Yonkers, New York

In Yonkers, existing public housing residents from concentrated highrise developments were successfully dispersed into middle-income areas using scattered-site townhouses designed with Defensible Space. This is a program now under active consideration by many major cities in the country—Chicago, Dallas, Newark, Boston, and Hartford, to name a few.

Throughout the country, hundreds of existing 40-year-old, high-density public housing projects are ready to be torn down. Their inhabitants are insisting on the dispersal of these units rather than on their rehabilitation or replication. HUD has been taken to court by some of these residents and by the U.S. Department of Justice to prevent the perpetuation of these ghettos. Yonkers provides a workable model of how this can be done without spreading crime, depressing property values, or prompting middle-class flight.

Presentation format

For those new to the Defensible Space concept and for those wishing to be brought up to date with my work, I have devoted the first chapter to an introduction to its principles. I also discuss some research findings from our institute's numerous studies. This chapter serves to explain many of the principles I use in approaching various design problems.

In each of the three case studies that follow, I first describe the community, its location, socioeconomic makeup, physical plant, and crime and abandonment problems. I then present the conceptual solution, showing how some of the community's problems can be addressed with physical modifications. The design principles used in making these proposed physical changes are then explained using photographs and graphics as needed.

As I mentioned earlier, people also want to know the step-by-step procedure I use for getting such projects off the ground:

- Who has to be the driving force in the city and neighborhood: residents, politicians, or police?
- Which municipal, State, or Federal agencies have to become involved?
- What is the needed participation of the city's traffic, fire, emergency ambulance, garbage collection, and police departments?
- How does one ensure the continued participation of residents?
- How vital is resident participation to the planning and implementation process, and ultimately, to the success of the whole endeavor? (Preview answer: essential.)

From this, I go on to explain how the physical plan actually evolved, including a discussion of the various options that were considered. I have tried to separate those aspects of the plan that are essential to each of the three prototypes from those that were specific to a particular site. I use schematic diagrams to explain the design principles involved, and hard-line drawings to show how these design principles were applied to specific sites.

Controversies that arose in the planning process or delays that occurred in the acceptance or implementation process are also discussed to teach the lessons of other communities' experiences and to prepare people for the struggles and pitfalls that lie ahead.

To the degree that such data are available (and they vary with each case study), I then discuss the effects of these modifications on the identified problems: residents' fears and sense of control, vacancy and abandonment, traffic, the overt presence of drug dealers, crime, residents' assumption of maintenance responsibilities, increase in reinvestment and property values, and middle-class and white flight.

Finally, I attempt to define the limits to which each case study can be applied to other communities. For instance, the percentage of renters or multifamily buildings may be too high in some residential communities to allow them to replicate the Dayton, Five Oaks mini-neighborhood project.

Defensible Space Principles

The concept

All Defensible Space programs have a common purpose: They restructure the physical layout of communities to allow residents to control the areas around their homes. This includes the streets and grounds outside their buildings and the lobbies and corridors within them. The programs help people preserve those areas in which they can realize their commonly held values and lifestyles.

Defensible Space relies on self-help rather than on government intervention, and so it is not vulnerable to government's withdrawal of support. It depends on resident involvement to reduce crime and remove the presence of criminals. It has the ability to bring people of different incomes and race together in a mutually beneficial union. For low-income people, Defensible Space can provide an introduction to the benefits of mainstream life and an opportunity to see how their own actions can better the world around them and lead to upward mobility.

Over the past 25 years, our institute has been using Defensible Space technology to enable residents to take control of their neighborhoods, to reduce crime, and to stimulate private reinvestment. We have been able to do this while maintaining racial and economic integration. The process has also produced inexpensive ways to create housing for the poor, often without government assistance. In this chapter, I will briefly explain the origins and principles of Defensible Space and introduce the reader to the results of our various research projects.

Evolution of the concept: Pruitt-Igoe and Carr Square Village

The Defensible Space concept evolved about 30 years ago when, as a teacher at Washington University in St. Louis, I was able to witness the newly constructed 2,740-unit public housing highrise development, Pruitt-Igoe, go to ruin. The project was designed by one of the country's

Figure I–1:
Overall view of Pruitt-Igoe, a 2,740-unit public housing project constructed in St. Louis in the 1960s.

most eminent architects and was hailed as the new enlightenment. It followed the planning principles of Le Corbusier and the International Congress of Modern Architects. Even though the density was not very high (50 units to the acre), residents were raised into the air in 11-story buildings. The idea was to keep the grounds and the first floor free for community activity. "A river of trees" was to flow under the buildings. Each building was given communal corridors on every third floor to house a laundry, a communal room, and a garbage room that contained a garbage chute.

Occupied by single-parent, welfare families, the design proved a disaster. Because all the grounds were common and disassociated from the units, residents could not identify with them. The areas proved unsafe. The river of trees soon became a sewer of glass and garbage. The mailboxes on the ground floor were vandalized. The corridors, lobbies, elevators, and stairs were dangerous places to walk. They became covered with graffiti and littered with garbage and human waste.

Figure I–2:
The architect's vision of how the 3d floor communal corridor in Pruitt-Igoe would be used.

The elevators, laundry, and community rooms were vandalized, and garbage was stacked high around the choked garbage chutes. Women had to get together in groups to take their children to school and go shopping. The project never achieved more than 60 percent occupancy. It

was torn down about 10 years after its construction and became a precursor of what was to happen elsewhere in the country.

Figure I–3:
The 3d floor communal corridor as it actually turned out, showing the vandalism that ensued.

Across the street from Pruitt-Igoe was an older, smaller, row-house complex, Carr Square Village, occupied by an identical population. It had remained fully occupied and trouble-free throughout the construction, occupancy, and decline of Pruitt-Igoe. With social variables constant in the two developments, what, I asked, was the significance of the physical differences that enabled one to survive while the other was destroyed?

Figure I–4:
Vandalism to the large number of vacant apartments in Pruitt-Igoe as seen from the outside.

Walking through Pruitt-Igoe in its heyday of pervasive crime and vandalism, one could only ask: What kind of people live here? Excluding the interior public areas of the development there were occasional pockets that were clean, safe, and well-tended. Where only two families shared a landing, it was clean and well-maintained. If one could get oneself invited into an apartment, one found it neat and well maintained—modestly furnished perhaps, but with great pride. Why such a difference between the interior of the apartment and the public spaces outside? One could only conclude that residents maintained and controlled those areas that were clearly defined as their own. Landings shared by only two families were well maintained, whereas corridors shared by 20 families, and lobbies, elevators, and stairs shared by 150 families were a disaster—they evoked no feelings of identity or control. Such anonymous public spaces made it impossible for even

Figure I–5:
Pruitt-Igoe in the process of being torn down, at a loss of $300 million.

neighboring residents to develop an accord about acceptable behavior in these areas. It was impossible to feel or exert proprietary feelings, impossible to tell resident from intruder.

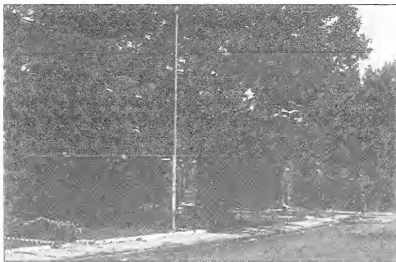
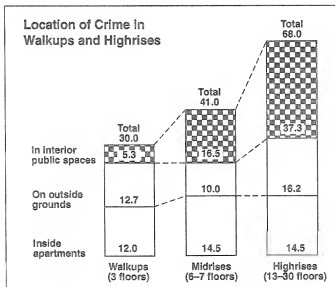



Figure I–6:
Carr Square Village, a row-house development located across the street from Pruitt-Igoe.

Most of us have seen highrise apartments occupied by middle-income people that function very well. Why then do they not work for low-income families? Middle-income apartment buildings have funds available for doormen, porters, elevator operators, and resident superintendents to watch over and maintain the common public areas, but in highrise public housing, there are barely enough

funds for 9-to-5 nonresident maintenance men, let alone for security personnel, elevator operators, or porters. Not surprisingly, therefore, it is within these interior and exterior common public areas that most crime in public housing takes place.

Given that funds for doormen, porters, and resident superintendents do not exist for public housing, the question emerged: Is it possible to design public housing without any interior public areas and to have all the grounds assigned to individual families?

Figure I–7: *Graph showing the relationship between the increase in crime and increased building height and that crime is mostly located within public areas.*

The private streets of St. Louis

Also in St. Louis, I came upon a series of turn-of-the-century neighborhoods where homes are replicas of the small chateaux of France. They are the former palaces of St. Louis' commercial barons—the rail, beef, and shipping kings. These chateaux are positioned on privately held streets, closed to through traffic. St. Louis in the mid-1960s was a city coming apart. The influx of people from the rural areas of the South had overwhelmed the city. It had one of the Nation's highest crime rates, but the private streets appeared to be oblivious to the chaos and abandonment taking place around them. They continued to function as peaceful, crime-free environments—nice places to rear children, if you could afford a castle. The residents owned and controlled their own streets, and although anyone was free to drive or walk them (they had no guard booths), one knew that one was intruding into a private world and that one's actions were under constant observation. Why, I asked, could not this model be used to stabilize the adjacent working and middle-class neighborhoods that were undergoing massive decline and abandonment? Was private ownership the key, or was the operating mechanism the closing-off of streets and the creation of controlled enclaves? Through research funded by the National Science Foundation (Newman, Dean, and Wayno, 1974) we were able to identify the essential ingredients of the private streets and provide a model that could be replicated throughout the

Figure I–8:
Aerial view of typical closed streets in St. Louis.

city. This was done in both African-American and white areas, and its implementation succeeded in stabilizing communities in transition.

The effect of housing form on residents' ability to control areas

Over the next few pages I will explain how different building types create spaces outside the dwelling unit that affect residents' ability to control them. Firstly, I should explain what I mean by the *dwelling unit:* It is the interior of an apartment unit or home. That is the case whether the unit is one among many in a highrise building or sits by itself on the ground. I am interested in learning how the grouping of units in different types of building configurations creates indoor and outdoor "nonunit" spaces of different character.

For simplification, I have grouped all buildings into the three categories that capture the essential differences among them. These three categories are: single-family houses; walkups; and highrises.

Single-family houses come in three basic types: detached houses; semidetached houses; and row houses (row houses are also called townhouses).

The fully detached building sits by itself, not touching any other building; the semidetached building has two single-family units sharing a common wall; and the row-house building has a few single-family units sharing common walls with other units, one on each side. Although all three types of single-family buildings look different, they share an essential common trait: Within the four walls of each type of building is the private domain of one family. There are no interior spaces that are public or that do not belong to a family. All the interior spaces, therefore, are private. Even the row house is subdivided into a series of distinctly private spaces. There are no interior spaces within any single-family building—whether a row house, a semidetached building, or a fully detached

house—that are shared by more than one family.

The fundamental difference in the three types of single-family houses shown is the density at which they can be built—which is to say the number of units that can be put on an acre of land in each of these configurations. The upward limit of the detached house is about six units to the acre. The upward limit of the semidetached house is eight units to the acre, but this allows for a driveway to be put between each unit, something that could not be achieved in detached units at six to the acre. Row houses can be built at an upward limit of 16 units to the acre if one also wishes to provide off-street parking on a one-to-one basis.

- All interior spaces are within the private domain of the family.
- All grounds around the private unit are for the private use of the family.
- There is a direct abutment between private grounds and the sidewalk.
- The domain of the house encompasses the street.

Figure I–9:
Three types of single-family houses and the nature of spaces in and around them.

When one looks at the grounds surrounding these three types of single-family units, one finds that all the grounds are private because they have been assigned to each unit. Regardless of which type of single-family building we examine, each has been designed so that each unit has its own front and rear yard. The front yard of each unit also immediately abuts the street. If we attempt to categorize the grounds as either private, semiprivate, semipublic, or public, we would have to conclude that the rear yards are certainly private because they belong to individual families and are only accessible from the interior of each unit. The front yards also belong to individual families, but because they are accessible from the street as well as from the interior of each unit their character is different. I have classed them as semiprivate because of this difference, but some people would say that they are really private.

Looking at the next classification of building—the walkup—one finds that a radical new element has been introduced that totally changes the character of both the inside and outside of the building. We now have circulation areas within the building that are common because they are shared by a few families. The number of families sharing these common

- Private space is within the apartment unit only.
- The interior lobby, stairs, and corridor are semiprivate.
- Grounds can be designated for one family but are usually shared by all the families in the building.
- Only a small number of families (three to six) share the interior circulation areas and grounds.
- The street is within the sphere of influence of the dwellings.

Figure I–10:
Walkup buildings and the nature of spaces in and around them.

areas depends on how the entrances, corridors, and stairs are distributed within the building.

In figure I–10, the walkup building is subdivided so that six families share a common entry and interior circulation stair. Two families per floor share a common landing. Entrances from the common staircase usually exit to the outside at both the front and rear. Such buildings are often called garden apartments.

Walkups can be built at a density of 30 to 40 units per acre if they are 3 stories in height, and at a density of 20 to 30 units to the acre if they are only 2 stories in height. Three-story walkups were commonly built in the 1950s and 1960s, but as these are nonelevator buildings, the 3-story walkup has fallen out of favor with the decline in housing demand.

Because the grounds surrounding 3-story walkups, front and back, belong to all the families living in the building, they cannot be considered private. The grounds in the front of the unit are also adjacent to a public street. For this reason I would categorize the grounds in front as semipublic space. The grounds at the rear of the unit are also not assigned to individual families and the rear of the units are often used for parking. In such a case, the grounds at the back would also have to be considered semipublic. It is, however, possible to modify the design of the rear grounds to make some of the areas private and the remainder semiprivate, and I will demonstrate how to do that shortly.

We come now to the last of our three building types: the highrise. These are elevator buildings and commonly come in two sizes, depending on the type of elevator used. The least expensive elevator is the hydraulic, but it has an upward limit of six stories. The electric elevator can comfortably

go up to 30 stories, but it is usually used in 10- to 16-story apartment buildings.

The 15-story building at the right has 195 families sharing common interior areas. Because of the large number of people sharing them, these interior areas can only be designated as semipublic or even public. Even the corridors on each floor are shared by 13 families and are accessible from 2 sets of stairs and 2 elevators that are very public. For this reason I would have to designate these corridors as semipublic, if not public.

Figure I–11: *The elevator highrise and the nature of space in and around it.*

The outside grounds, because of their disassociation from any of the individual units, and the fact that they are shared by 195 families, can only be designated as public.

Summary of the effect of building type on behavior

A family's claim to a territory diminishes proportionally as the number of families who share that claim increases. The larger the number of people who share a territory, the less each individual feels rights to it. Therefore, with only a few families sharing an area, whether it be the interior circulation areas of a building or the grounds outside, it is relatively easy for an informal understanding to be reached among the families as to what constitutes acceptable usage.

When the numbers increase, the opportunity for reaching such an implicit understanding diminishes to the point that no usage other than walking through the area is really possible, but any use is permissible. The larger the number of people who share a communal space, the more difficult it is for people to identify it as theirs or to feel they have a right to control or determine the activity taking place within it. It is easier for outsiders to gain access to and linger in the interior areas of a building

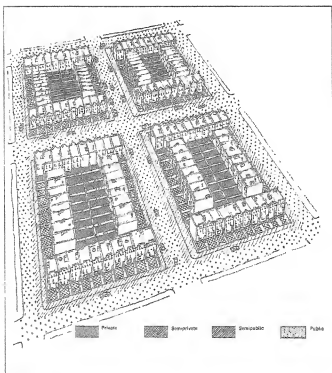



Figure I–12:
A four-city-block row-house development. Only the central portion of the roadbed can be considered fully public.

shared by 24 to 100 families than it is in a building shared by 6 to 12 families.

The effect of building type on residents' control of streets

If we examine the three building types from the viewpoint of residents' ability to exert control over surrounding streets, we again find marked differences.

Figures I–12, I–13, and I–14 graphically summarize the major differences between residents' ability to control the areas around their homes and public streets. The three illustrations show the same four-block area of a city, each developed using a different building type.

Figure I–12 is an illustration of a row-house development built at a density of 18 units to the acre. Each city block has been subdivided so that all the grounds, except for the streets and sidewalks, are assigned to individual families. The front lawns, because each belongs to an individual family, are designated semiprivate. The rear yards, which are fully enclosed, are private. In fact they are only accessible from the interior of the dwelling units. The close juxtaposition of each dwelling unit and its entry to the street contributes to the incorporation of the sidewalk into the sphere of influence of the inhabitants of the dwelling. This is further reinforced by the fact that their semiprivate lawn abuts the sidewalk, and the family car is parked at the curb. Residents' attitudes suggest that they consider this sidewalk and parking area as semipublic, rather than public.

Examining the entire four-block area, we find an urban fabric in which most of the outdoor areas and all of the indoor areas are private. In addition, a good portion of what is a legally public street is viewed by residents as an extension of their dwellings and under their sphere of

influence: that is, the sidewalk and that portion of the roadbed on which their cars are parked. Because of the close juxtaposition of the street to the private front lawn of each dwelling, residents are concerned about ensuring its safety and act to maintain and control it. In actual fact, only the very central portion of each street is truly public in nature. If the street were narrow, even the activity in this central portion would be considered accountable to neighboring residents.

Figure I–13:
A four-city-block garden apartment development. The streets and grounds are encompassed within the domain of the multifamily dwellings.

Figure I–13 shows the same four-block area, this time accommodating 3-story garden apartments built at a density of 36 units to the acre. The rear courts within the interior of each cluster have been assigned both to individual families and to all the families sharing the cluster. The families living on the ground floor have been given their own patios within the interior courts, with access to them from the interior of their unit. These patios are therefore private. The remainder of the interior court belongs to all the families sharing a cluster and is only accessible from the semiprivate interior circulation space of each building, making the remainder of the interior cluster semiprivate.

The small front lawn adjacent to each building entry is the collective area for that entry's inhabitants and is therefore semiprivate. As in the row-house scheme in figure I–12, all the entries face the street, but each entry now serves six families rather than one and is thus semiprivate rather than private. Parking again is on the street immediately in front of each dwelling. Because of the semiprivate nature of the grounds, the sidewalk and street are not clear extensions of the realms of individual dwelling units. But even with all these limitations, the neighboring sidewalk and parking zone on the street are considered by many residents as areas over which they exert some control.

Figure I–14:
A four-city-block highrise development. All the streets and grounds are public.

Figure I–14 is the same four-block area shown in figures I–12 and I–13, but now developed as a highrise superblock at a density of 50 dwelling units to the acre. Each building entry serves 50 families by means of an interior circulation system consisting of a public lobby, elevators, fire stairs, and corridors. The grounds around the buildings are accessible to everyone and are not assigned to particular buildings. The residents, as a result, feel little association with or responsibility for the grounds and even less association with the surrounding public streets.

Not only are the streets distant from the units, but no building entries face them. The grounds of the development that abut the sidewalks are also public, and, as a consequence, so are the sidewalks and streets. This design succeeds in making public the entire ground surface of the four-block area. All the grounds of the project must be maintained by management and patrolled by a hired security force. The city streets and sidewalks, in turn, must be maintained by the city sanitation department and patrolled by city police.

The placement of the highrise towers on the interior grounds has produced a system of off-street parking and access paths to the building that involves many turns and blind corners. Residents in such developments complain about the dangers of walking into the grounds to get to their buildings at night. The proclivity of landscape designers for positioning shrubs exactly at turns in the paths increases the hazards of these access routes. This problem does not arise in traditional row-house or walkup developments where building entries face the street and are set back from the sidewalk no more than 10 to 20 feet. Nor do these fears occur in highrise buildings whose entries face the streets and are only set back slightly from them. In these latter cases, residents are able to move in a

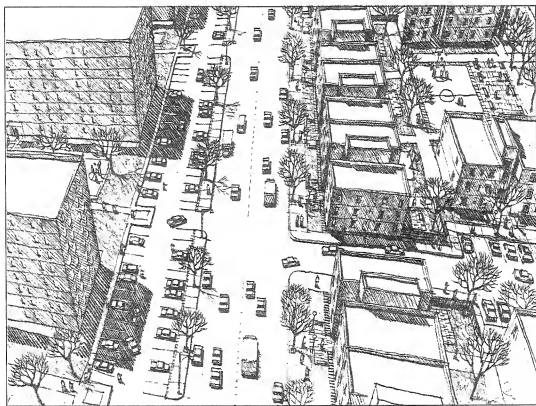
Figure I–15:
A highrise and a walkup built at the same density. The project on the left is turned in on itself, away from the public street, while the one on the right brings the streets within the control of the residents.

straight line from the relative safety of the public street to what they can observe to be the relative safety of the well lighted lobby area in the interior of their buildings.

Figure I–15 shows two housing projects located across the street from one another: a garden apartment complex on the right and a highrise on the left. Both projects are designed at the same density and with similar parking provisions (40 units to the acre and 1 parking space per unit). The highrise project has all building entries facing the interior grounds of the development. Parking has been designed as a continuous strip along the street, further disassociating the buildings from the street. The project on the right is only three stories in height and has all the buildings and their entries juxtaposed with the city streets or the interior streets and parking. Each entry faces the street and serves only 6 families, whereas the highrises have 60 families sharing a common entry. Small play and sitting areas have been provided near the entry to each walkup. This

Figure I–16:
Comparison of two ways to subdivide the same building envelope to serve the same number of families, but in radically different ways.

serves to extend into the street the sphere of influence of each of the six families.

The residents in the walkup are a very short distance from the surrounding streets, and because of the positioning of the building entries, play areas, and parking, the neighboring streets are brought within the sphere of influence of inhabitants.

Another important lesson to learn from this comparison is that 2 radically different building configurations can be produced at the same density: in this case a density of 40 units to the acre with 1-to-1 parking. This is a very high density that will satisfy the economic demands of high land costs. The walkup development achieves the same density as the highrise by covering more of the grounds (37 percent ground coverage versus 24 percent). Municipalities that wish to reap the benefits of walkup versus highrise buildings must learn to be flexible with their floor-area-ratio requirements to assure that they are not depriving residents of a better housing option in order to get more open ground space that has little purpose.

What is true for site design is also true for building design: The same building envelope can be subdivided in different ways to produce dramatically different results. For instance, figure I–16 shows two ways of configuring a three-story walkup. Both buildings serve a total of 24 families each. In the upper layout, all 24 families share 2 common entrances and 8 families share a common corridor on each floor, although access to the corridors on each floor is open to all 24 families in the building. In the lower design, only 6 families share a common entry, and only 2 families share a common landing on each floor.

In the lower design, the smaller number of families sharing an entry and landing allows the families to control the public spaces better: They can more readily recognize residents from strangers and feel they have a say

in determining accepted behavior. If this were a two-story building rather than a three-story building, it would have been possible, in the lower design, to give each family its own individual entry directly off the street and thus avoid having any interior public spaces at all.

	Correlations with dependent variables			
Social and physical variables	*Indoor felony rate*	*Indoor robbery rate*	*Robbery rate*	*Felony rate*
Percentage of population receiving welfare	(1)[a].51	(1) .46	(1) .47	(1) .54
Building height (number of units per entry)	(2) .36	(2) .36	(2) .36	(5) .22
Project size (number of apartments)	(3) .27	(3) .26	(3) .25	(3) .22
Percentage of families with female head on AFDC	(4) .44	(4) .41	(5) .36	
Number of publicly assisted projects in area	(5) .25	(5) .26	(4) .33	
Felony rate of surrounding community				(2) .41
Per capita disposable income				(4) .49

N.Y.C. Housing Authority police data for 1967: 87 housing projects. .01 level of significance at ±.27, .05 level of significance at ±.21.
[a] Numbers in parentheses indicate rank order of correlation in creating stepwise multiple regressions.

Figure I–17: *Crime rates as explained by social and physical variables.*

Social factors and their interaction with the physical

An understanding of the interaction of the social and physical factors that create high crime rates in low- and moderate-income housing developments is useful not only for devising remedies to solve their problems but also for developing strategies for stabilizing neighboring communities composed of single-family housing.

Figure I–17 shows the influence of different social and physical factors on the crime rates in low- and moderate-income projects operated by the New York City Housing Authority. This analytical technique called *stepwise regression analysis* is employed when many different factors interact to produce a particular effect, such as, a rise in crime rates. The technique isolates those factors that contribute to the effect most strongly and independently of other factors. In figure I–17 the percentage of population receiving welfare is shown to be the most important factor, followed by building height or the number of families sharing the entry to a building.

Those social variables that correlated highly with different types of crime also correlated highly with each other. These include: the percentage of resident population receiving welfare (excluding the elderly), the percentage of one-parent families receiving Aid to Families with Dependent Children (AFDC), and the per capita disposable income of the project's residents.

My interviews with residents, management, and police provide the following explanation for the correlation of these social factors and crime rates: A one-parent household headed by a female is more vulnerable to criminal attack; families with only one adult present are less able to control their teenage children; young teenage AFDC mothers are often victimized by their boyfriends; the criminal activity by the poor is tolerated, if not condoned, among the poor; the poor, and particularly the poor of racial minorities, are unable to demand much in the way of police protection; and the commission of crime against residents in ghetto areas requires minimal skill and risk.

The physical factors that correlate most strongly with crime rates are, in order of importance: the height of the buildings, which in turn correlates highly with the number of apartments sharing the entry to a building; the size of the housing project or "the total number of dwelling units in the project"; and the number of other publicly assisted housing projects in the area.

The above suggests that two classes of physical factors contribute to crime rates: (1) those such as "project size" or the "number of publicly assisted projects in the area" that reinforce social weakness and pathology; and (2) those such as "building height" or "the number of units per entry" that affect the ability of residents to control their environment. The first class of physical factors may also be considered another class of social variable: For instance, if certain social characteristics such as the percentage of AFDC families correlate highly with crime rate, then we can anticipate that a large number of such families gathered together in one area may aggravate the crime problems still further and increase the per capita crime rate.

The significance of this aggregation is not simply that the presence of more potential criminals creates proportionally more crime, but also that a concentration of potential criminals actually increases the rate of crime. Thus, large low-income projects, or low-income projects surrounded by other low-income projects, suffer a higher crime rate than small or isolated projects even when the percentage of AFDC families remains the same in all the projects.

A frequent complaint from residents of communities surrounding large public housing projects is that the teenage criminals living in the projects make use of the large, anonymous environment of the housing project as a place to retreat and hide. For example, there is a particularly notorious project in Jersey City that is located adjacent to U.S. Highway 1 entering New York City. A traffic light at an intersection that borders the project forces truckers to stop there on their way into New York. Teenage project residents have developed a pattern of hijacking trucks at the stoplight, by throwing the driver out and driving the truck into the project. The truck is then emptied in a matter of minutes and the loot hidden in vacant apartments.

The relationship between the socioeconomic characteristics of residents and a project's crime rate had long been suspected. The most fascinating finding to come out of the data analysis presented in *Defensible Space* (1972) was, therefore, the influence of building height and number of units per entry in predicting crime rate. Regardless of the social characteristics of inhabitants, the physical form of housing was shown to play an important role in reducing crime and in assisting residents in controlling behavior in their housing environments.

In addition to the fact that buildings with a large number of families sharing an entry experience higher crime rates than those with few families per entry, they are also vulnerable to additional types of criminal activity. Most of the crime experienced by residents of single-family buildings is burglary, committed when members of the family are either away from home or asleep. By contrast the residents of large, multifamily dwellings experience both burglaries and robberies. The higher crime rate experienced by residents in large multifamily dwellings is mostly attributable to the occurrence of robberies in the interior common-circulation areas of multifamily buildings: lobbies, hallways, stairs, and elevators. These are also the areas where criminals wait to approach their victims and force them into apartments for the purpose of robbing them.

Of a total of 8,611 felonies reported in all New York City Housing Authority projects in 1969 (excluding intrahousehold incidents), 3,786, or 44 percent, were committed in the interior public areas of buildings. Of the crimes

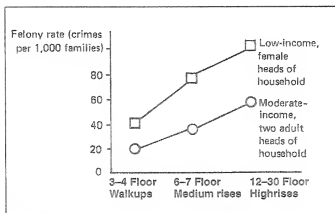



Figure I–18:
Variations in crime rate as produced by different socioeconomic groups occupying different building types.

committed in interior public areas, 3,165, or 84 percent, were robberies. The breakdown by location of the felonies taking place in interior public areas was: elevators, 41 percent; hallways, 22 percent; lobbies, 18 percent; stairways, 9 percent; roof landings, 2 percent; and other, 8 percent.

Although the socioeconomic characteristics of the residents exert a strong influence on crime rate, the physical characteristics of the buildings and the project can exert a counteracting influence. The physical form of residential environment can, in fact, ameliorate the effect of many of the problems created by the concentration of low-income one-parent families with teenage children.

The more complex and anonymous the housing environment, the more difficult it is for a code of behavior following societal norms to become established among residents. It is even difficult for moderate-income families with two adult heads of household to cope with crime and vandalism problems in poorly designed environments, but when poor and broken families are grouped together in such a setting, the results are nothing short of disastrous. The public housing projects now experiencing the highest vacancy rates are those that consist of the worst mixture of social and physical attributes.

Figure I–18 compares the vulnerability to crime of low-income one-parent families in different building types with the experience of moderate-income two-parent families living in the same building types. These are the further results of the 1972 Defensible Space analysis of New York City housing authority data. It shows that low-income one-parent families are more vulnerable to poor building design than moderate-income two-parent families. Although two-parent moderate-income families suffer higher crime rates in highrise buildings than they do in walkups, the crime rate does not increase as dramatically with building height as it does for low-income families. Moderate-income 2-parent families living

in 12- to 30-story buildings experience a lower crime rate than low-income 1-parent families living in 6- and 7-story buildings.

The suitability of building types to lifestyle groups

I have explained the problems resulting from housing low-income families with children in highrise buildings. But one should not conclude from this that highrises are not suitable for other lifestyle groups. For instance, elderly people, even those of low income, do very well in highrise buildings as long as the buildings are kept exclusively for the elderly.

Elderly people do not like walking stairs and appreciate an elevator building. Retired elderly often live away from their children, and their elderly neighbors become their new extended family. At the push of an elevator button, they can have access to a hundred other families within a highrise building.

If we also design the ground floor of an elderly highrise as a communal and recreation area, we can create a security station at the building entry door that can be manned by elderly volunteers. If a problem arises, a push of a button summons the police. With the use of gates and fencing, the grounds surrounding their building can also be secured and defined for their exclusive use.

The lesson we can learn from this is that some of the highrise stock we have inherited, because it has proven unusable for welfare families with children, may lend itself to conversion for the exclusive use of the elderly.

However, we should not jump for joy too quickly. Many of our highrise public housing projects in large cities like New York, Chicago, and Boston were built as 1,000-unit agglomerations, and the need for such a concentration of the elderly is, at present, just not there. Also, the community surrounding such a 1,000-unit agglomeration will meanwhile have been devastated—no place to be putting the elderly. It would not be wise to convert 1 of 10 highrise buildings for the elderly, while keeping the adjacent 9 buildings for families with children. The elderly would be victimized and refuse to live in such an environment.

Finally, even when highrises exist in isolation, the cost of converting a building made up of three-bedroom apartments into one-bedroom units may be prohibitive.

Factors influencing crime and instability

Our institute's study of the *Factors Influencing Crime and Instability in Federally-Assisted Housing* (Newman and Franck, 1980) involved 44 moderate-income housing sites and 29 public housing sites in three cities: Newark, St. Louis, and San Francisco. It used a path analysis to take into account the influence of other factors, including socioeconomic characteristics, management effectiveness, quality of city police and security services, and form of ownership.

The results showed that two physical factors and two social factors accounted for most of the variation. The two physical factors were the size of the development and the number of families sharing common entries into a building. The two social factors were the percentage of families on AFDC and the ratio of teenagers to adults. As public housing has become housing for the poorest of the poor, the only variables that lend themselves to modification are the physical, *project size and the number of apartments sharing common entries.*

Project size is a measure of the overall concentration of low-income families in a project or cluster of projects. We found that the larger the concentration, the more residents felt isolated from the rest of society and felt their perceived differences to be greater. Project size affects stigmatization—as perceived both by the outside world and by the project residents themselves. The apathy that comes with stigmatization leads to neglect and withdrawal, first on the part of the residents, then by housing management, and finally by the municipal agencies that service the project: police, education, parks and recreation, refuse collection, and social services. A large project provides a continuous area in which gangs can operate, allowing even one gang or group of drug dealers to contaminate all of its public space.

The larger the number of units *sharing common entries* is a measure of how public the interior corridors, elevators, and stairs are. The more residents who have to share common areas, the more difficult it is to lay

claim to them; the more difficult it is to distinguish other residents from intruders; and the more difficult it is to agree with other residents on the care and control of these areas.

The numbers within the brackets below show the amount of variation in residents' behavior that is explained by building size. If the number is preceded by a minus, it means that an increase in building size has a negative effect on that behavior. In the case of residents' use of public areas, for instance, the numbers in brackets mean that an increase of 1 unit in building size will cause a reduction of 0.50 of a unit in residents' use of public areas. This demonstrates that building form has a very strong predictive capacity on public area use, independent of other factors that are also likely to predict it.

Building size has a statistically significant direct causal effect on residents' behavior as follows:

(i) Use of public areas in their development [–0.50].

(ii) Social interaction with their neighbors [–0.31].

(iii) Sense of control over the interior and exterior public areas of their development [–0.29].

Further results of our path analysis showed that building size has important causal effects on fear of crime [0.38] and on community instability [0.39], independent of socioeconomic, managerial, ownership, police, and guard service factors. Community instability is measured by apartment turnover and vacancy rates and by residents' desire to move. However, as in the 1970 New York City public housing study discussed earlier, the findings from our study of moderate-income developments showed that the socioeconomic characteristics of residents also have strong causal effects on fear, instability, and crime.

Independent of other factors, the socioeconomic characteristics of residents have a total causal effect on fear of crime of 0.59, on community instability of 0.51, and on crimes against persons of 0.32. These findings can be interpreted as follows: A unit increase in the percentage of AFDC families living in a development will produce 0.59 of a unit increase in fear of crime.

The data from this analysis can be summarized in still another way by looking at the results of the regression analysis. The R^2 is a sign used to represent the percent of variance in one factor that is predicted by all other factors acting together. The effects of building size, socioeconomic characteristics of residents, management performance, form of ownership, and police and guard service together produce the following: $R^2 = 0.69$ for fear ($p < 0.001$); $R^2 = 0.67$ for community instability ($p < 0.001$); and $R^2 = 0.39$ for crimes against persons ($p < 0.05$). Another way of stating these findings is that the combination of these factors predict 69 percent of the variation in fear, for instance. But more important still, of all the factors in the predictive model, it is the socioeconomic characteristics of residents and building size that together predict most of the variation in fear, instability, and crime.

Mini-neighborhoods in Five Oaks, Dayton, Ohio

The Five Oaks community in Dayton, Ohio, is a one-half-square mile residential area located a mile north of the downtown. It contains 2,000 households, or about 5,000 people, inhabiting one- and two-family homes and some small apartment buildings.

Figure II–1:
Map locating Five Oaks and downtown Dayton. Note the expressway that connects downtown to the suburbs and the exit ramp at the foot of the Five Oaks community.

Like most American cities, Dayton experienced rapid suburban expansion following World War II. The exodus of the middle-class population from the city was accompanied by the relocation of shopping facilities, manufacturing, and office buildings. The replacement population was initially composed of working-class homeowner families, but over time these were replaced again by lower income renters who were mostly African American.

The problems experienced by Five Oaks are typical of older urban communities located near the downtown core: heavy through traffic; rising crime; the visual presence of drug dealers and prostitutes; single-family homes being converted to multifamily use; the continuing replacement of white, middle- and working-class property owners with low-income, minority renters; and general disinvestment. The U.S. census showed that in the 10 years between 1980 and 1990, the community went from a population of mostly white homeowners to 50-percent African American and 60-percent renter.

During the year before the Defensible Space modifications were undertaken, violent crimes increased by 77 percent; robberies by 76 percent; vandalism by 38 percent; and overall crime by 16 percent. Not only was

crime increasing at a maddening pace, but drug dealers, pimps, and prostitutes had brazenly taken over the streets. Gun shots could be heard at all times of the day and night; blaring boomboxes meant to attract drug purchasers disturbed everyone's sleep; and speeding cars, the byproduct of these illicit activities, threatened people in their own streets. Children were virtually kept locked up in their homes. A 13-member police strike force hit the neighborhood round the clock every few months, but the results were only temporary.

Figure II–2:
Typical street in Five Oaks.

The Dayton Area Board of Realtors reported that sales values had dropped by 11 percent in that 1 year, while regional values rose 6 percent. Every second house in Five Oaks was up for sale.

Downtown Dayton still retains some of its finer old office and shopping buildings. Neighborhoods beautifully constructed in the 1920s border this downtown. Five Oaks is one of these, and it serves as a gateway between the downtown and the suburban residential communities to the north. It is encountered on a daily basis by those coming to the downtown area to work and shop. Five Oaks is a community symptomatic of the city's problems and aspirations. For this reason many in the city government felt that what happens to Five Oaks will happen to the rest of Dayton. If Five Oaks fell, there would be a domino effect on the surrounding communities.

But Five Oaks' location between the downtown and the suburbs also turned its interior streets into a network of cut-through traffic as commuters used them to avoid the larger, traffic-laden arterials at the periphery of the community. Of Five Oaks' total traffic volume, 35 percent was found to be cutting through the neighborhood. The general effect was to burden its streets so heavily as to make them unsuitable for normal, quiet residential use—a use common to cul-de-sac streets in the suburbs where, ironically, most of the cut-through traffic was headed.

Five Oaks was also experiencing social problems: The dynamics of population change in the community had led to increased tensions between the older, permanent homeowners and the new, transient renters who were seen as a threat to the stability of the neighborhood. The lack of shared values and aspirations among neighbors increased feelings of isolation and the perception of being on their own. Even the most innocent of activities, such as children playing in the street, or one neighbor asking the other for more careful garbage disposal, was perceived as intolerance and incivility.

Ironically, because of its location and socioeconomic makeup and the perception that it was still safe, Five Oaks was perceived as an ideal community for drug dealing directed at middle-income outsiders. To the immediate west of Five Oaks is a community that also had drug dealers working its streets, but that community had become predominantly African American, 30 percent vacant, and severely deteriorated. It was perceived as too dangerous a place to buy drugs and solicit prostitutes by white, middle-class buyers. So the activity moved to Five Oaks. One wonders if the drug purchasers thought that the residents of Five Oaks would protect them or call the police if a drug deal went sour or a pimp got too greedy.

The noisy and blatantly evident traffic of drug dealers, prostitutes, and their clients was disturbing to the community out of all proportion to the number of vehicles, or threat, they represented. The police, however, did suspect that the frequency of burglaries and auto thefts in the community stemmed directly from drug-related activities.

Unable to sell their homes for a price that would pay off their outstanding mortgages, many homeowners had moved away and rented them—often in subdivided form and at times illegally and in a substandard fashion. The result of these inexpensive and inadequate conversions was the rapid, and visually evident, deterioration of the housing stock. This led to a reluctance on the part of neighboring homeowners to keep up their own properties. The community had entered a spiral of decline that appeared irreversible. Houses were selling for one-half to one-quarter of their replacement cost. The only buyers were slumlords.

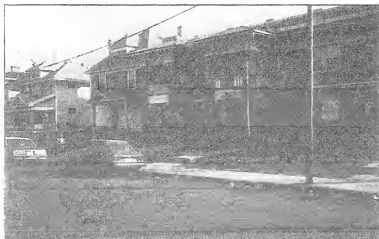



Figure II–3:
Deteriorated two-story walkup in Five Oaks being rented to drug dealers.

Community and municipal efforts to acquire and refurbish deteriorated housing had barely any impact. Five times as many houses were being lost as were being refurbished. Slumlords, who found that drug dealers were undemanding tenants, rented to them and let their properties decline still further—pulling the condition of adjacent housing down with them. An immediate change to the infrastructure was necessary, one that would visibly alter the entire pattern of use and would make itself evident at the scale of the whole community. The problem with the city's program of refurbishing single homes scattered throughout Five Oaks was that it did not produce any visual evidence of rehabilitative change at the scale of the entire community.

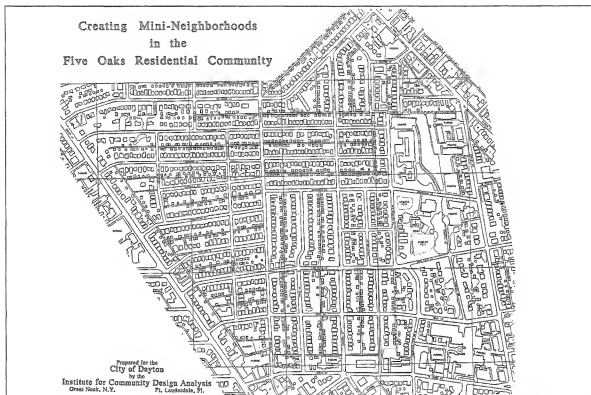
Five Oaks contains a variety of different types of housing: Some streets have large, stately homes on them, constructed of brick and stone and situated on large lots; others have wood frame houses on small lots. Still other streets contain two-story, two-family houses that share a common wall, while others house two- and three-story apartment buildings. Some of the arterial streets have medium highrise apartment buildings on them.

Figure II–4:
Street in Five Oaks with various building types.

The community also houses some important institutions: The Grandview hospital complex, located in the southeast quadrant of Five Oaks, serves the entire urban region; two large parochial schools on

the east side of Five Oaks, Corpus Christi and Dayton Christian, serve the broader city as well as the immediate community.

The west and east borders of Five Oaks are defined by two major arterials that link northern suburban Dayton with downtown Dayton (Salem Avenue on the west and North Main on the east). The northern boundary of Five Oaks is a residential street called Delaware Avenue. Its southern boundary is a mixed residential and institutional street called Grand Avenue. A further mixed-use residential and commercial street defines a portion of the Five Oaks boundary to the east: Forest Avenue. Most of the traffic on the streets of Five Oaks was perceived as going through the neighborhood heading for suburban destinations to the north.

Figure II–5:
Map of Five Oaks showing internal streets and arterial boundaries.

The 1990 census revealed that 3 of the 5 sectors that compose Five Oaks have 64-percent or more renters. The remaining 2 sectors have 43-percent and 49-percent renters.

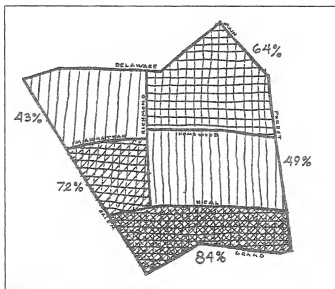



Figure II–6:
Map of Five Oaks showing percent of renters in different areas, 1990.

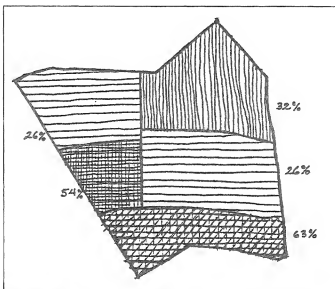



Figure II–7:
Map of Five Oaks showing percent of African-American renters in different areas, 1990.

Because most of the dwellings in Five Oaks consist of one- and two-family houses, the data reveal that many homeowners have moved away and are renting their units in either their original form or subdivided. This is partially because they were unable to sell their homes at reasonable prices.

Figure II–7 shows that most of the renters in Five Oaks are African American. Because African Americans earn about two-thirds the income of whites, it would appear that the rental market is at the lower end of the scale.

Figure II–8 shows that the three sectors of Five Oaks that have a high percentage of renters also have a high vacancy rate, ranging from 10 percent to 29 percent. Citywide, Dayton has a vacancy rate of only 6 percent.

Despite the evident change revealed by the census data, Five Oaks continued to be attractive to people working for institutions located in the downtown area: for example, city government, the universities, and hospitals. Its large, well-constructed houses could not be easily replicated today: Their materials are too costly, and the craftsmen who put them together are of a bygone era. At the low end, a wood frame and shingled, three-bedroom house on a small lot sold for between $45,000 and $55,000, depending on its condition. A larger, brick house with ornate architecture, quality woodwork and glass, on a larger lot, could be purchased for

$75,000. Should one be interested in rental property, a two-family brick house with each unit having two bedrooms could be purchased for as little as $58,000. The large, stately houses on large lots that had a replacement cost of more than $500,000 could be purchased for just over $100,000.

Figure II–8: Map of Five Oaks showing percent of vacancies in different areas, 1990

Initiating the process

Our institute first became involved in Five Oaks when the Dayton Police Department's superintendent of community relations, Major Jaruth Durham-Jefferson, made an inquiring telephone call. She was a forceful but charming African American who had heard of my work with street closures in St. Louis. "The Dayton community," she said, "was talking Defensible Space as a remedy to some of its crime and traffic problems, and there was some disagreement in people's minds about what it meant. Would I care to come for a visit so they could hear, from the horse's mouth, what it was all about? And while I was there, would I care to take a first-hand look at the communities in question?" I was not sure whether I was being asked or told. That telephone call led to a 3-day trip, night and day tours of many of Dayton's communities, meetings with key city officials and staff, and lectures to both the city staff and the community at large. In preparation, Major Durham-Jefferson had supplied me with the demographic and crime data I had requested and scheduled all the meetings.

From the positive response to this initial visit by residents and staff came a request from the city manager for our institute to embark on a program that would produce schematic plans for the modification of two communities: Five Oaks, the racially mixed residential community near Dayton's downtown; and Dunbar Manor, a predominantly African-American public housing project. These two communities were typical of many in Dayton. The city manager hoped that by having city staff work closely with me, they could learn how it was done and could then

apply the methodology elsewhere themselves. In this book I will only talk about the Five Oaks portion of our work in Dayton because the modifications to the Dunbar Manor public housing project have yet to be completed or evaluated.

The day-to-day running of the Five Oaks project was assigned to the city's director of urban development, Ray Reynolds. He asked the planning department and highway department to each assign a staff person to work with me full time while I was in Dayton. Police representatives attended all meetings with the community and city staff. The chief of police himself attended the large public presentations. The police also made crime data available as needed and were a continuing supportive presence.

Initial presentations to city staff and the community

The initial 3-day visit to Five Oaks was critical in determining whether the city and community would buy into the concept. The night of my arrival I insisted on a tour of the neighborhoods we would be visiting the next day. Major Durham-Jefferson looked a little concerned. "The only way to find out what we're dealing with," I told her, "is to see what is going down at night." During that night tour we witnessed a drug raid by police in the public housing project and saw drug dealing and prostitutes on many streets within Five Oaks. We drove in Major Durham-Jefferson's own car, rather than in a police car, so as not to create a disturbance. Not knowing our identity, drug dealers vied with each other to make a sale.

The next morning's meeting with city staff was scheduled early so as not to disrupt their working day. The city manager had assembled most department heads, including: fire, emergency response, garbage collection, snow removal, planning, community relations, and traffic. I particularly insisted on having all those people who were likely to be most opposed to the concept present. The chief of police was also present, but he was expected to be a proponent of the idea. At this initial meeting, it is essential also to have the mayor, the city manager, and a few city council members present. This informs the city department heads that the concept is being taken seriously, and

they look to elected officials for guidance about whether to be receptive to the idea and give their cooperation.

I have found that, from the start, a planner must take into account where all the opposition to his concepts is likely to come from and address them first. He must understand who all the players are, what their concerns are, and how to involve them in the process. Mini-neighborhoods only work if the community and the city staff really accept the idea.

At the initial meeting, the city staff, elected officials, and I sat around a table together. Using a slide projector, but sitting with them at the table rather than talking from a podium, I explained the Defensible Space concept by showing what I had done in other cities. I told them that they were free to interrupt at any time with any questions. I explained that the reason they were the very first in the city to see the concept was that I knew they were not going to like it. It was going to complicate how they collected garbage and how they removed snow, the fire and ambulance people were going to have to memorize new routes for getting to places quickly, and it was going to disrupt traffic flow, but it was also going to make a big difference to the life and viability of communities and to the city's tax base, because it would reduce crime, increase property values, and stabilize neighborhoods.

I then explained that the plan would only be prepared with their continual participation. That meant that representatives from every city department would be involved in every step of the process. If, at any time, we proposed something they thought was unworkable, I wanted them to say so. We would then try to find a way to modify what we were planning so as to accommodate them. We would not proceed with the plan until we felt we had arrived at something everyone could accept.

In planning mini-neighborhoods, it is very important to get to know all the players and what is bothering them. This is as true for the politics within city hall as it is for neighborhood rivalries. Sometimes what is being expressed as objective opposition to the idea has its origin in personal politics, but it is just as important to know that as to learn the internal pecking order and priorities at city hall. For instance, in Dayton, the current director of the planning department had just been demoted from assistant city manager by a new administration. He felt that he should

have been made the coordinator of this project rather than the city's director of urban development. Even though one of his staff was assigned to me full time, the planning director kept raising philosophical and operational objections to the evolving plans. I attempted to address them all, but soon realized that something more was wrong. I invited the city manager and the director of urban development out for a drink and learned that the planning director had hoped that he would become the new city manager. The Five Oaks plan was the new city manager's first showcase project, and the planning director was not going to do anything to help it along. Once I knew that, I tried to sidestep the planning director rather than engage in long public discussions with him.

Following that initial meeting, I toured Five Oaks in a minivan with community leaders and city staff. On tour, we frequently stopped to walk the streets and alleys, picking up residents along the way who had earlier been alerted. I explained the concept to them and sought their input, trying out ideas on them about which streets to close. I took slides as we walked and had them developed within the hour so that they could be incorporated into later presentations.

Following the neighborhood tour, we all had lunch together at an informal eating place. This was intended as an opportunity for everyone to relax. With neighborhood people coming into contact with so many city department heads, the discussion often went off on tangents—old wounds were opened. However, this is a source of useful information, and it gives city staff a sense of what is taking place on the streets of their neighborhoods.

That evening, I gave a formal presentation to a previously well-publicized town meeting. As many community people and city personnel as possible were invited. A few hundred people attended. I again showed slides about what I had accomplished in other cities, but this time I also included slides of the streets I had just walked through to show how similar the situations were. The presentation was followed by an open question period that lasted more than an hour. It is important that this community meeting be chaired by a city staff person and that city staff appear at the podium with me to help answer some questions. Otherwise, the appearance given is of an outsider telling the community how to do things.

In my presentations, I explain what the restructuring of streets to create mini-neighborhoods accomplishes: It alters the entire look and function of the community; it completely removes vehicular through-traffic (the only traffic remaining will be seeking destinations within each mini-neighborhood); and it completely changes the character of the streets (instead of being long, directional avenues laden with traffic, they become places where children can play safely and neighbors can interact). By limiting vehicular access, the streets are perceived as being under the control of the residents. Fewer cars make it easier to recognize neighbors—and strangers. I explain that access to the newly defined mini-neighborhoods, which will contain three to six streets, will be limited to only one entry off an arterial street. People will only be able to drive out the same way they came in. It is important to explain, again and again, that the gates will only restrict vehicular traffic: Pedestrians will be able to freely walk everywhere they did before.

Limiting access and egress to one opening for each mini-neighborhood means that criminals and their clients would have to think about coming into a mini-neighborhood to transact their business, as they would have to leave the same way they entered. There would no longer be a multitude of escape routes open to them down every city street. A call to the police by any resident would mean that criminals and their clients would be meeting the police on their way out. Such a street system will clearly be perceived by criminals, and particularly by their clients, as too risky in which to do business.

The subdivision of a community into mini-neighborhoods is intended to encourage the interaction of neighbors. Parents will watch their children playing in the now quiet streets and get to know each other. They will no longer feel locked up in their houses, facing the world alone. Tensions between renters and property owners, and the concern over incivilities, will likely also diminish as both parties living on the same closed street come to know each other through greater association and are able to develop standards of mutually acceptable behavior together.

Five Oaks demonstrated that once people came together within their own mini-neighborhood, they reached out to other neighborhoods and to the larger urban community. In other cities, mini-neighborhoods have not

only arrested decline; they have made people realize they could intervene to change things, and led them to become active in city politics. This is something we documented in our study of the closed streets of St. Louis (Newman, Grandin, Wayno, 1974) and witnessed not only in Dayton but in our mini-neighborhood projects in Florida. At the level of the neighborhood, reinvestment in one's own property no longer has to be undertaken as a risky, individual act but as an activity done in concert with one's neighbors.

The cost of creating mini-neighborhoods is low, about $10,000 for each gate serving 30 to 40 households. Cities can use a variety of means for paying for the modifications: In St. Louis, the middle-income residents almost universally paid for it themselves; in Florida, some cities used CDBG funds to pay for the implementation costs, while others issued special district tax bonds to pay for the work and taxed the beneficiaries accordingly. Using the latter method, each household pays about $60 extra in real-estate taxes per year over a 10-year period to cover the cost of the modifications. Still other cities split the costs between residents and CDBG or capital improvement funds.

Resident participation in paying for the gates is important for three reasons:

- It instills a sense of ownership, and enhancing proprietary feelings is what Defensible Space modifications are all about. Paying for one-half the cost of the modifications gives residents a possessive attitude toward the gates and the semiprivate streets they create.

- It gives the community more control over the future of the modifications. If, down the road, a new city administration decides, for whatever reason, that it no longer wants the gates, the community will have more leverage in preventing the city from removing them if it has paid for one-half the construction costs.

- A community's willingness to cover 50 percent of the cost makes a city more receptive to the idea and gives the project priority in the city's capital improvement budget. Cities are always looking for ways to stretch their limited funds and politicians want to take as much credit as they can in physically evident change.

It is very important to make clear to residents that most of their internal streets will be converted to cul-de-sacs and that in the first few months following the modifications residents, their outside friends, and service people will be inconvenienced. During this initiation period, many residents will want the gates removed, including some of those who voted to have them installed. But after 4 months and after residents and their friends have had a chance to learn to find their way around, people will not be able to believe the improvement in the quality of their lives produced by these changes and will insist that the gates remain.

At the conclusion of these initial meetings, I ask residents and city staff if the consensus is that we continue with the process to see if we can develop a plan or simply stop there. I specifically do not ask for approval of the concept, as this is premature: Most people will have heard of the Defensible Space and mini-neighborhood concepts only for the first time; they will need time to digest them. More importantly, people will need to see how the planning process evolves, whether their participation genuinely shapes the plan, and what the plan for their mini-neighborhood will actually look like. After these initial meetings, the overwhelming majority of Five Oaks residents voted to continue with the process.

Figure II–9:
Greek cross plan for an ideal mini-neighborhood layout.

Community participation in designing the mini-neighborhoods

It is critical to the success of the plan that as many people as possible participate in defining the boundaries of their mini-neighborhoods, that is, in deciding which streets should remain open, and where the gates should go. On my second trip to Dayton, I called the community together and showed them large plans of Five Oaks. These plans showed each house on each street

Figure II–10:
Overly large cul-de-sac layout.

and each shed in each alley. I explained to the residents that they were now going to define their own mini-neighborhoods and outlined the principles they should use in defining them:

- Smallness is essential to identity, so a mini-neighborhood should consist of a grouping of no more than three to six streets. The optimal configuration for a mini-neighborhood is a Greek cross, a vertical with two horizontals. Only one point of the cross will remain open, the other five will have gates across them.

- Cul-de-sac configurations should not be too large, for they take residents too far out of their way and produce too much of their own internal traffic. If a mini-neighborhood is made up of a vertical with six horizontals, for instance, residents will have to travel too long a distance to get to the end of their mini-neighborhood, and then they will have to travel all the way back to get out of it. In the process, they will encounter others doing the same thing. This will produce a great amount of internal traffic, and traffic is exactly what we are trying to avoid.

- A mini-neighborhood should consist of a grouping of streets sharing similar housing characteristics: building type (such as detached, semidetached, row houses, and walkups), building size, lot size, setbacks from the street, building materials, architectural style, and density.

- To facilitate access by emergency vehicles, access to the entry portals of each mini-neighborhood should be from existing arterial streets. As much as possible, these arterials should be on the border of the Five Oaks neighborhood to enable outsiders to find their way in easily.

- Mini-neighborhoods and their access arterials should be designed to facilitate access but discourage through-traffic in the overall Five Oaks community.

I then asked people to come up to the map, gave them each a different colored felt pen, and said, "First make an X where you live and then show us what you think of as your mini-neighborhood." Then I asked the rest of the audience: "How many of you who live nearby agree with their boundaries?" Some would say *yes*, others would say *no*. I would then ask the *no* persons to come up and take another colored pen, locate where they live, and draw in their view of their mini-neighborhood. This process inevitably elicits some friendly booing interspersed with applause. Then I ask if anybody else wants to change that boundary. And so it goes until we reach a consensus. Such meetings often run for a few hours. It is usually possible to get any differences resolved, but sometimes it becomes necessary to put in two mini-neighborhoods where you might have anticipated only one. A common mistake, in any case, is to make mini-neighborhoods too large. It is important to keep in mind that this process has two functions: to understand the neighborhoods that exist in people's minds, and to bring people together to begin planning for their own future.

Figure II–11: Schematic showing ideal way to access mini-neighborhoods from arterials.

Once the mini-neighborhoods are defined, I ask people to volunteer to become mini-neighborhood captains. Their job is to make certain that every household in their mini-neighborhood is aware of what is being planned and participates in determining which street will remain open and where the gates will be placed. This will require putting fliers in everyone's mailbox to announce meetings and city council hearings.

Figure II–12: *Mini-neighborhood boundaries of Five Oaks as defined by residents.*

Traffic studies

As soon as the city of Dayton committed itself to the process, I asked the highway department to undertake origin-destination studies to determine how much traffic on the streets of Five Oaks was simply driving through the neighborhood. They found that 35 percent was. I then asked them to determine whether the existing arterials at the periphery of Five Oaks would be able to handle the 35-percent cut-through traffic that would be removed from the neighborhood streets. They found that they could.

Description of the Five Oaks mini-neighborhood plan

The final Five Oaks mini-neighborhood plan that evolved under my guidance was very much what the community sketched at its meetings. Minor modifications were made to accommodate traffic and emergency vehicle access but always with community approval.

The one-half-square-mile Five Oaks community was divided into 10 mini-neighborhoods, each defined by the characteristics discussed earlier. Thirty-five streets and 25 alleys were closed. Two of the mini-neighborhoods, Corpus Christi and Grandview, housed the community's major schools and hospital complex. The remaining eight mini-neighborhoods were primarily residential in character—one included part of the hospital complex. Each mini-neighborhood was defined on the basis of a similarity in the size of the houses and lots, the materials of construction, and whether they contained single-family or multifamily buildings. Each mini-neighborhood contained between three and six streets.

The major arterials that defined the periphery of the Five Oaks community were retained intact and allowed east-west and north-south movement past the community. They were: Grand and Delaware going east-west; and Salem, Forest, and Main going north-south.

Only one north-south arterial that was internal to the community was retained in my plan, Richmond. The community later decided that it would prefer to have Richmond interrupted so as to further discourage north-south through-traffic. This produced some congestion on one or two streets, and it is difficult to know whether that change was worthwhile.

The 10 mini-neighborhoods were given temporary names for identification purposes only. These were the names of the most prominent street within each: Kenilworth, Kenwood, Harvard, Grafton, Homewood, Neal, Rockford, and Squirrel. The other two neighborhoods are Corpus

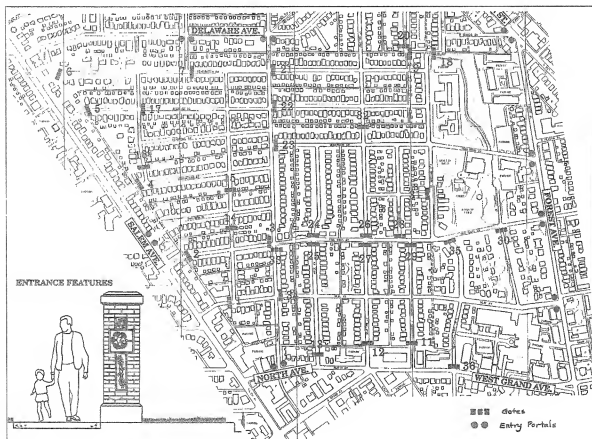
Figure II–13: *Mini-neighborhood plan for Five Oaks showing location of gates and entries into mini-neighborhoods.*

Christi and Grandview, the school and hospital complex. The internal, two-way arterials that both define and give access to each of the mini-neighborhoods were: Five Oaks, Richmond, Old Orchard, Homewood, Neal, and Rockford.

Figure II–14:
Hammerhead turn at end of street.

A plan showing the workings of these access arterials and the cul-de-sac streets that serve each mini-neighborhood appears in figure II–13.

Because the existing streets in Five Oaks are too narrow, the cul-de-sac at the end of each street is not aetually a cul-de-sac but is either a hammerhead turn, or makes use of the intersecting alleys to provide a turnaround at the end of each deadend street.

Only one entrance, or portal, is provided to each mini-neighborhood, and it is the only way out as well. A prominent symbol should be used to mark the entry and indicate that one is coming into a private world. We proposed the use of brick pillars that included the Five Oaks name and the name of the mini-neighborhood. We also proposed that the pillars be positioned within the roadbed, intentionally constricting the entry. These pillars were to be placed to define the outer line of the curbside parking. We also recommended that a brick paving strip be introduced into the roadbed running between the two pillars. The top of the bricks would be level with the road surface, but the strip would produce a noise and a noticeable vibration as automobiles ran over it. This would bring to the drivers' further attention the fact that they were entering a different kind of street. The bricks are intentionally not raised above the surface of the road so they

Figure II–15:
Proposed portal markers for mini-neighborhoods.

will not interfere with snow removal equipment. A standard deadend street sign would also be added to explain that there was no other outlet.

Figure II–16: Actual position of portals as installed.

The pillars actually installed by the city were positioned on the sidewalk on the far side of the road. They proved to be barely visible and did little to identify the entry portals. The decision to position them this way, rather than the way we proposed, was the result of the snow removal people saying that pillars located within the roadway would prove a hazard.

The gates installed by the city limiting access and egress to and from each mini-neighborhood come very close to the ones we designed. They are relatively prominent and serve to deter vehicular access while allowing pedestrians entry. In our design we had proposed two additional smaller gates above the sidewalks on either side of the road. These pedestrian gates were to remain open all the time. A fence would then continue the closure running from the pedestrian gate to some physical element on the adjoining property (fencing, shrubs, or a building).

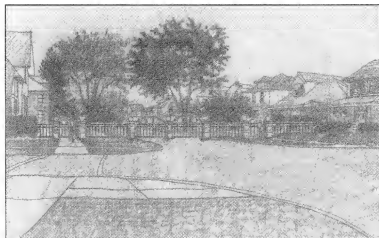



Figure II–17: Proposed gates defining mini-neighborhoods.

In case of emergencies, such as access for fire trucks and ambulances, these gates are able to be opened. Fire and emergency personnel should be given keys to them. To simplify access to all streets by moving vans, a few residents living near these gates should also be given keys to them.

Figure II–18:
Gates as actually installed.

In implementing our designs, the city decided to simplify my gate design, eliminating the pedestrian gate on either side of the road and the fence extension from the pedestrian gate onto the adjacent property. The city also eliminated the lights we proposed for the tops of the pillars. These were intended to illuminate the gates at night. The city used large reflectors instead, saving money by not having to provide lights, replacement bulbs, or wiring from the nearest electric utility pole. The result is not too elegant and detracts from the stylishness of the gate.

The basic reason for the city changing the gate design was cost. Only 70 percent of the residents wanted the mini-neighborhood design implemented, and in order to placate the others, the city manager promised that a survey would be taken at the end of the first year. If the majority of residents wanted the gates removed, the city would remove them. This policy dictated that the gate design be simple to minimize costs both for implementation and removal. Although there is still another reason why the pedestrian gates were eliminated: The city wanted it made clear that the gates were intended to restrict automobile traffic only, and that pedestrians would continue to have unlimited access to every street. It should be remembered that children would still have to walk through various mini-neighborhoods to get to and from school.

In the street closures implemented in Florida, communities used attractive plantings set against walls rather than gates to close off streets. The lack of snow and the lack of street curbs and gutters allowed that to be done where it could not be done up north. These floral solutions must be careful not to interfere with existing drainage patterns, however. The repositioning of rainwater sewers and the provision of new gutters to accommodate a planted area at the end of a street can prove prohibitively costly. It can also deprive the fire department of the flexibility of an operable gate in the case of a serious emergency.

The alley problem in Dayton

The fact that many of the houses in Five Oaks are also served by alleys, and that these alleys are used for both parking and garbage collection complicated our plan appreciably. For maximum effectiveness in facilitating community control and in reducing crime, access to the alleys had to be limited to the residents of each mini-neighborhood and to the garbage collection vehicles.

In all cases, the alleys were too narrow to allow a garbage truck to turn around and go back the way it came. This would also be inefficient and costly. Garbage trucks had to have the ability to continue through to the alley in the next mini-neighborhood. In some instances, such as in the Grafton and Homewood mini-neighborhoods, a common alley served streets in two different mini-neighborhoods, making it impossible to make each mini-neighborhood truly separate.

Access to the alleys as well as to the streets was closed off by locked gates to which only the sanitation department had keys. Garbage trucks were to be the dominant users of the locked alley gates. Residents did not need to open the alley gates because they could turn their cars around in the alleys as they entered or left their parking garages.

Figure II–19: Gates across the rear alleys. Parking garages are seen in background.

Allied measures for stabilizing the community

The physical modifications were intended to dramatically redefine the community and give residents greater control and use of their streets. But these physical modifications were only the first of three other measures implemented in the Five Oaks community. The first measure was critical to the success of the physical plan. The three other measures are listed below in order of their importance.

Coordinate police activities with target areas. Once the gates were installed, police, in a concerted effort, came in and flushed out the drug dealers, pimps, and prostitutes. They had done this before in Five Oaks, but the criminals had come back a week or 2 later. However, when the criminals were removed after the gates were installed, they did not return.

I believe that this police component is very important to the success of the entire program. Continual police liaison with the community and their participation in community planning meetings is also essential to giving the community the reassurance it needs. The effect of creating mini-neighborhoods in other communities where I have worked has been to personalize community/police relations. Creating mini-neighborhoods has produccd a genuine appreciation of the police for the work they do and has resulted in a focused program by the police to eliminate the rcal problems threatening the community. Police officers come to be recognized and known by their first names. The police, in turn, now know many community residents by name. When a problem arises, they usually know exactly where to go to address it. A year after the modifications, police say it takes a much smaller expenditure of force on their part to keep Five Oaks free of crime.

One of the benefits of street closure and the creation of mini-neighborhoods is that it brings neighbors together in unified action to address their joint problems. It also focuses their attention on removing criminal activity from their communities. Rather than having one or two hesitant neighbors acting in isolation to bring criminal activity to the attention of the police, an entire street, or a mini-neighborhood, now acts in concert to alert the police and provide them with support in their anticrime efforts. A united community can more readily document criminal activity and photograph and identify criminals. Immediately after the street closings, police will be called upon by the community more frequently. These calls for service will diminish rapidly as the word about the street closures spreads to criminals and their clients. Police will find themselves working with a community that has a clearer sense of its own values and how they want the police to assist them. It should prove easier for the police to make arrests and to discourage further criminal activity within the community.

Improve code enforcement procedures. There were some truly disreputably maintained properties in Five Oaks that discouraged adjoining property owners from making their own improvements. Many properties had so many code violations, they could be shut down by the city for being beyond repair. Their owners were milking them for what they could and not reinvesting a penny. When these buildings could no longer attract even poor families, the landlords rented them out to drug dealers, who were pleased with the location and had little need for amenities.

The effect of neglected property is threefold: It results in neglect of adjacent property; it brings down sales prices in the surrounding area; and it attracts drug dealers who increase crime, traffic, and the perception that the community is out of control and going downhill. All of this causes the flight of even more homeowners, thus further deflating property values.

Although normal municipal code enforcement procedures do exist, they are most effective against those property owners who are already conscientious and concerned. They prove cumbersome to implement against slumlords who retain attorneys to endlessly delay the resolution of a complaint and see the small fines exacted by the city as part of their cost of doing business. Using the normal process, years can go by before any fines are exacted, and even then no improvements of any significance will have been made.

To counter these difficulties, the city of Fort Lauderdale developed an innovative code enforcement procedure that has not only proved to be quick and effective, it has brought in revenue that more than covers the cost of the program. It is called a *code team* and works as follows: Using the State powers given to police to enforce municipal ordinances—that means powers up to and including arrest—the police are able to issue warnings stating that code violations are arrestable offenses that can result in immediate court appearances.

The code team usually includes a building inspector and a police officer or a fire marshall. In this way, the necessary expertise can be presented before the court at the same time. Court appearances are usually scheduled within 30 days of a recorded violation. Of the 250 violations cited since the code team went into action in Fort Lauderdale, all 250 have

resulted in fines and corrections. The most notorious city slumlord has been arrested at his office, handcuffed, and brought before a magistrate. The city's fines and the improvements required of the slumlord are putting him out of business.

Another proven method for dealing with property occupied by drug dealers is property confiscation. Both municipal codes and Federal laws permit this action.

Encourage first-time homeownership. Much of the physical decline in Five Oaks is attributed to the exodus of resident homeowners. Absentee landlords simply do not maintain their properties. This is particularly true of two-family houses, where the side-by-side rental units are in the worst state of repair. Before the decline of Five Oaks, the most common form of tenure had the owner living in one unit and the renter in the other. This is no longer so.

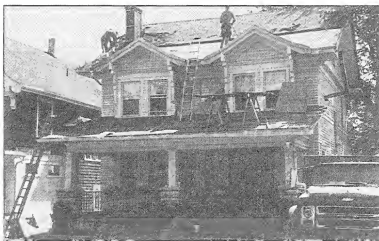



Figure II–20: *Residents making improvements to their homes after the creation of the mini-neighborhoods.*

The residents of Five Oaks felt that a city program that assists people in purchasing and living in the duplex units is critical to the rehabilitation of their neighborhood. The key to such a program is to couple assistance for the downpayment with funds needed to rehabilitate the unit. The actual cost of these duplex units is not high, and with a readily available loan, the amount of the downpayment is no more than a few thousand dollars. Window and roof replacement are commonly needed repairs, as are furnace, plumbing, and electric improvements. This rehabilitation can lead to a cost of $10,000 to $20,000 per duplex. A subsidy for rehabilitation that is tied to a required residency of 5 to 10 years (with prorated benefits) would be most advantageous and cost effective in maintaining property values and the urban tax base. Such a program could also be directed at perspective purchasers of single-family houses.

Because many of the purchasers of these duplexes will likely be first-time homebuyers, a parallel education program that teaches them how to prioritize repairs and to manage and maintain rental property is essential. This would also help to ensure that the funds being invested in the program will be spent most effectively.

There are various Federal, State, and local programs directed at first-time homebuyers and at rehabilitation. Local banks have a Federal obligation to participate in local rehabilitation efforts. Dayton devised a three-point demonstration program to improve distressed properties. It provides funds to train existing landlords to be better managers; it educates and provides downpayment assistance to renters who are positioning themselves to become homeowners; and it provides interest rate buydowns and loans for home purchase, rehabilitation, and improvement. The city targeted the Five Oaks community with these programs immediately after the street closures went into effect.

Evaluation of the modifications

An evaluation by the city's office of management and budget revealed that within a year of creating the mini-neighborhoods, cut-through traffic was reduced by 67 percent, overall traffic volume by 36 percent, and traffic accidents by 40 percent. A survey of 191 residents conducted by the Social Science Research Center of the University of Dayton showed that 73 percent of residents thought that there was less traffic, but 13 percent saw no change; 62 percent said there was less noise, but 27 percent saw no change (Dayton OMB Evaluation, 1994).

The police department found that overall crime had been reduced by 26 percent and violent crime by 50 percent. Robbery, burglary, assault, and auto theft were found to be the lowest they had been in 5 years. By comparison, in Dayton overall, crime had increased by 1 percent. The university survey showed that 53 percent of residents thought there was less crime, but that 36 percent felt there was no change; 45 percent felt safer, and 43 percent thought it was as safe as it had been before.

Housing values were up 15 percent in Five Oaks in the first year, versus 4 percent in the region. People's investment in their homes and property

Figure II–21:
Renter and homeowner children playing together in a cul-de-sac street. The gates can be seen at rear.

had substantially increased. The owners of 75 rental buildings and 45 homeowners had applied for and received city improvement loans. Others had gone directly to banks or financed improvements themselves. With the neighborhood changing and housing values going up, people found that it now paid to make improvements: They were no longer acting alone and knew they would be getting their money back when they sold the property. A survey found that housing requiring both major and minor repairs dropped by 45 percent. For the first time in many years, houses in the neighborhood were attracting families with children. There was a 55-percent increase in housing sales during this same 1-year period.

The University of Dayton's survey found that 67 percent of residents thought their neighborhood was a better place to live, while 13 percent said it had remained about the same; 39 percent said they knew their neighbors better, while 53 percent said they knew as many as before; 24 percent said it was easier to recognize strangers; and 36 percent were more involved in the community (that is, through block clubs, civic activities, neighborhood watches). Most importantly, there was no difference in these perceptions between African Americans and whites, renters and homeowners. Drugs, theft from houses and cars, and harassment were all found to be less of a problem than a year earlier (University of Dayton, 1994).

The usual complaint about such programs, that they displace crime into the surrounding neighborhoods, also proved untrue. Crime in all the communities immediately surrounding Five Oaks decreased by an average of 1.2 percent. The police's explanation is that criminals and their clients knew that the residents of Five Oaks have taken control of their streets, but because they did not know the neighborhood's exact boundaries, they moved out of the surrounding communities as well. The positive effects

in traffic reduction also spilled over into bordering communities as all of Five Oaks has itself become an obstacle to cut-through traffic. Other communities in Dayton are now exploring a similar restructuring.

Whether this neighborhood stabilization effort served to deprive low-income residents of future housing opportunities in Five Oaks is best answered in this way: The neighborhood to the immediate west of Five Oaks is virtually identical in physical construction. Its decline preceded that of Five Oaks by a few years. Nothing was done to stop it. Driving through it now, one finds that every third house has either been boarded up or torn down. The community is perceived as being so unsafe that even white drug buyers will not go into the neighborhood. It is no longer a desirable place to live for renters or homeowners. Because of the high rates of abandonment and vacancy, there are fewer low-income renters per block now than in Five Oaks. So the policy of letting neighborhoods decline to create rental opportunities for low-income families proves to be a short-lived one. From the city's point of view, that neighborhood now contributes very little to its tax base, and its infrastructure of streets, water, power, and sewer lines goes wasted.

By comparison, Five Oaks is reducing its vacancies. Its African-American, low-income renters share their streets with middle-income whites. Their children play together. They benefit from low crime, good schools, and safe streets and play areas. The quality of municipal services Five Oaks receives, such as police, fire, snow removal, and garbage collection, is typical of that enjoyed by middle-income communities that contribute to the city's tax base. The mutual respect resulting from closer contact between the different racial and income groups has a positive effect on everyone. "The bottom line is this," says Ray Reynolds, the city's director of urban development, "if Five Oaks had not adopted its mini-neighborhood plan, it would have gone the way of its neighbor to the west."

Michael R. Turner, the mayor of Dayton, had the following to say after 2 years of observing the changes in Five Oaks:

> The Five Oaks neighborhood has been the subject of articles in professional journals, the popular press from *Newsweek* to the *Economist*, television shows from *The Today Show* to *Dateline NBC*. We

have hosted visitors from a dozen cities and responded to literally hundreds of requests for information. This attention is a testament to the search in America for urban solutions that work.

The lesson we learned in Dayton is that when Defensible Space concepts are applied thoughtfully and with complete grassroots involvement, results can make neighborhoods more livable and increase the sense of community.

Dayton is typical of many mid-sized cities in America: It has lost many of its major employers; it lost 25 percent of its population since 1970 (declining from 243,000 in 1970 to 182,000 in 1990); it has an average income of $22,000/year, compared with the average income in the county of $32,000/year; its unemployment rate is usually a couple of points above the national (9.4 percent in 1993).

But Dayton is also a city of world-class innovation, from the Wright Brothers Flyer to the pop-top can. The Five Oaks Neighborhood Stabilization program is another such innovation.

If your community is considering a Defensible Space plan, pay attention to the lessons we learned:

1. A high level of citizen participation is critical.

2. Do more than close the streets; make it a comprehensive program: offer first-time homebuyers loans, target code enforcement efforts, and use police task forces to flush out the bad elements.

3. Accept some shortcomings. There are going to be a lot of benefits, but also some traffic inconveniences. It is not like you are starting from scratch on a fresh site: This is a retrofitting process, and some of the problems will not have 100-percent solutions.

4. Put some public policy in place: Decide on how the changes to the streets will be made and paid for; and decide when and for whom the gates will be opened (for snow plowing, fire and police emergencies, etc.).

Limits to the application of the mini-neighborhood concept

The creation of mini-neighborhoods will not survive a cookie-cutter approach: The concept does not lend itself to every situation. In communities where neighborhood people have tried the concept on their own, they have often failed. The experience of the highway department initiatives in Chicago and Los Angeles are not much better. There are certain conditions that must be in place and the action must involve the community in a particular way to be successful.

Need for a minimal percentage of homeowners. Existing homeownership is a critical ingredient to the success of mini-neighborhood creation. I have found that the presence of 40-percent resident homeowners may prove to be a minimum requirement. This is because in many communities, renters are normally given only 6-month to 1-year leases. This does not give them time to develop a commitment to their neighborhood, nor is there any incentive for them to maintain the house they live in or to care for its grounds. For us to also expect them to be concerned about the nature of the activity in the street would be really stretching it.

It might be possible for this 40-percent homeowner minimum to be reduced if there is a community tradition of renters occupying their units for periods of 5 years or more, and/or if there is a strong community identity among renters, coupled with strong social organizations. This does occur in some cities. In Baltimore, for instance, some renters have occupied neighborhoods for a few generations and have strong communal and religious organizations within them. Where this exists, the percent of homeowners could drop to as low as 20 percent, but a first-time homebuyer's program should still be made a very active parallel component of the mini-neighborhood effort.

Need for a predominance of single-family units. The percentage of single-family houses versus multifamily housing on each street is also an important factor. This is because in single-family houses, the front yard belongs to the family. By closing the street it makes it easy for that family to extend its realm of concern from its front yard into the street. Single-family houses include all three categories: fully detached houses, semidetached houses, and row houses (see the exposition of Defensible

Space principles in chapter I). Each of these three categories of single-family houses has separate entries facing the street directly off its front yard.

It is not that easy to create mini-neighborhoods in streets composed of multifamily buildings. The entries to these buildings serve many families and are often located at the side rather than facing the street. The grounds are usually public and not associated with particular families. Thus residents' adoption of the closed street as an extension of their dwellings is not second nature.

Need for quality schools. If a mini-neighborhood program is meant to attract working- and middle-class families with children, it is necessary to have good schools in the area. Dayton's public schools are not highly regarded. The Five Oaks community had three parochial schools operating within its boundaries, and 30 percent of the students in these schools came from the community. Residents felt that the presence of these schools was a necessary ingredient to the success of the mini-neighborhood effort. Communities in other cities may not have parochial schools, but a magnet school of good quality can serve the same purpose. In some gated communities in St. Louis, where neither magnet schools nor parochial schools were in existence, parents participated actively in the local public schools to improve performance. They helped purchase books and supplies, and ran special music, art, and sports programs.

It should be remembered that one of the appeals of inner-city mini-neighborhoods is the quality housing available at low cost in comparison with the suburbs. But the price for that is the need to supplement the cost of local schooling, either through the use of parochial schools or through active participation on the part of residents in making local schools better.

Need for mini-neighborhoods to reflect people's perceptions. It is critical that residents from every street participate in the planning process and define their own mini-neighborhoods. This can be a time-consuming process that many cities would prefer to avoid. In cities where the highway departments designed the street closures without community involvement, the results have often been pointless.

Working with local institutions. In creating mini-neighborhoods, it is important to work closely with the institutions in the area. The schools,

hospitals, and universities can be a real resource in many ways. They usually have a stronger commitment to the neighborhood than individual homeowners. They are also in a position to subsidize their staff to buy homes in the community.

I try to hold my community meetings in hospitals and schools and invite the principals of these institutions to attend so that they too can help shape the plan and make it theirs. In Dayton, the plan I prepared made it easy for the hospital staff, ambulances, and patients to come and go. But after I left, the community modified that portion of the plan and, by so doing, antagonized the hospital staff. The city then had to tear down these gates and revert to my original plan. The lesson again is: Everyone must participate in the planning process from beginning to end.

Race and the attitude toward mini-neighborhoods. Most of my work in creating mini-neighborhoods has been in racially and economically mixed communities, but I have also worked in all-African-American communities of varying income levels. Where the residents of these communities were working and middle class, they proved to be as strong advocates of mini-neighborhoods as whites of similar incomes in predominantly white communities. They understood very clearly that these mechanisms would enable them to keep the local gangs under control and the drug dealers and prostitutes out.

The most difficult communities I have found to work in are those that are about 70-percent African American that are undergoing rapid transition. In these situations, some African-American residents perceive the proposed gates as a device for either locking them in or locking them out. When I point out that some of the most expensive communities in their city and suburbs are gated, they scoff, saying: What has that to do with us? African Americans in this country do have a history of being excluded, so their position is understandable. However, by totally refusing to entertain such a solution, they are depriving themselves of a simple and effective means of making their communities safer and free of traffic.

A bit into the process, I discovered that African-American opposition in communities undergoing transition often came from people who did not actually live in the community but were hoping to buy into it given that

housing prices were falling. Because of this situation, they did not want a program that would interrupt the trend. They did not enjoy hearing me say: "We're going to make this community more attractive to home-owners; and housing prices are going to jump by 20 to 30 percent." In self-defense, one of the things I learned to do was ask people to identify themselves and give their address in the community before they spoke. That put their criticism in perspective. But in truth, one cannot stabilize a neighborhood for homeowners and increase property values on the one hand, without also making it more expensive for some people to buy into on the other.

When working in one neighborhood, one is open to criticism of favorit-ism from various other neighborhoods throughout a city. It is important for a city, therefore, to target African-American and Hispanic-American communities as well as predominantly white communities for Defensible Space modifications. In Dayton, I prepared plans for the modification of a public housing project as well as for Five Oaks. In this way it cannot be said that the city's security programs are being directed only at middle-income families. In fact, I was told that Five Oaks was selected to be the first test of the mini-neighborhood concept in Dayton just because it was 50/50 African American and white. City officials feared that if it were a predominantly white community, their choice would have been severely criticized and implementing the modifications would have been made difficult.

Criticism from resident drug dealers and others. In some communities, drug dealers prove to be the wealthiest residents and often own the biggest houses. Needless to say, they feel very threatened by my proposals, but they will rarely get up and talk for themselves. Instead, they have well-spoken friends give long dissertations on the evil of gates and the removal of freedom of access and association, which is the "American way." When I reply that my experience has shown that mini-neighborhoods actually serve to bring people out of hiding and encourage them to interact with each other, they boo me. When I ask what evidence they can point to that shows that people living on open streets interact more readily, or interact across the urban spectrum, they are silent. (So, for that matter, are my critics from academia.) Our study in St. Louis compared closed streets with open streets and found a significant difference in residents' knowledge of their neighbors (Newman, Grandin, Wayno, 1974).

The police can be very useful in helping one learn about the relationship of community critics with drug dealers and slumlords. Let me hasten to say though that not everyone objecting to mini-neighborhoods on philosophical grounds is either a drug dealer or slumlord. Certainly, my critics from academia are not.

In some communities, including public housing projects, drug dealers are so omnipresent, they literally run the community and are strong contributors to the local economy. They provide young children with jobs as runners and subsidize the rents of seniors for the use of their apartments in which to hide their stash or to manufacture drugs. I have seen college-educated women at meetings speak of drug dealers as a financial boon to the community, oblivious to the fact that these same drug dealers have hooked resident teenagers on drugs and turned some of them into prostitutes.

In such communities, concerned residents will also stand up and say, "You don't understand the situation here. Drug dealers run this place. These gates are just going to enable them to further assert their control." That assessment may be correct: Mini-neighborhoods may not work there. Mini-neighborhoods only work where the people who do not want crime feel that they are the majority and that this mechanism will give them the control of their neighborhood they seek. But if they feel that the neighborhood is no longer theirs, they are right not to support the concept.

The Clason Point Experiment

Row-house communities account for one-fifth of all public housing in the United States. Many medium-size cities like Philadelphia, San Francisco, and Washington, D.C., have a significant number of row-house developments, and in smaller cities like Indianapolis, Fort Worth, and Oklahoma City, public housing for families with children was primarily built as row houses. From a Defensible Space point of view, this was a good first step because developers created housing with no interior public spaces. However, many of thesc projects prevent residents from controlling the spaces outside their homes because the units were so poorly positioned on their grounds.

Most residents come to public housing with no previous experience of maintaining a home of their own. Few havc ever had the opportunity of identifying the land outside their home as their own. Housing management knows this history, but rather than adopt a policy of guiding residents toward the assumption of responsibility, most authorities assume that their residents are inadequate to the task and accept the notion of their dependency.

I became interested in testing this basic assumption early in my Defensible Space work and looked for the opportunity of dividing up and assigning the previously public grounds of a housing project to individual residents. I wanted to learn whether residents would adopt these areas as their own and assume responsibility for maintaining and securing them. Actually, I had even greatcr hopes that after this reassignment of grounds, residents would look out their windows and see the public street, not as a distant environment, but as an extension of their own private lawns, and, therefore, under their sphere of influence and scrutiny.

My second interest in this experiment was to provide low-income residents, in their successful efforts in improving the grounds around their own homes, with living testament to the success and permanence of their individual efforts. Finally, I hoped that this success would change the attitudes of housing management about residents' ability to affcct change and take control.

The opportunity to radically redesign the grounds of a row-house project and to reassign it to residents was given me by the New York City Housing Authority in 1969. I say, given to me, but it took a great deal of convincing. After I had prepared the plans for the modification of the project, the authority changed its mind and withdrew its support. This was because they had made a recent decision to tear it down and build highrises on the site. I begged and pleaded, but to no avail. I finally had to go to our research sponsor, the U.S. Department of Justice, to ask them to intervene on our behalf. The housing authority acquiesced, and I am endlessly grateful to them. For what would have been the impact of my first Defensible Space writings without Clason Point? I tell this story only to prepare those who would follow me for the struggles they face. The management of the New York City Housing Authority used to say that I knew exactly how hard the floors of their building were from having been bounced off them so many times.

Although I have modified many row-house projects since Clason Point—and many have proven even more successful—I chose to use Clason Point here, as the example of this kind of work, because it was an important first step, and there were many things I did wrong that are worth pointing out.

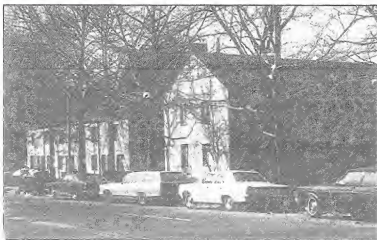



Figure III–1:
Clason Point as seen from street, before modifications. Note the overflowing garbage dumpster at left.

Clason Point is a 400-unit public housing project located in the South Bronx, a comparatively high-crime area of the city of New York. It consists of 46 buildings that mostly contain row houses. Smaller walkup units for seniors are located at the ends of some buildings. At 25 units per acre, this is a dense project by row-house standards. Such a high density was achieved by limiting off-street parking to 0.15 spaces per unit.

Figure III–2:
Interior grounds of Clason Point before modifications.

The project was built as munitions workers' housing during World War II when few people had cars. It was constructed of exposed cement block in an army barracks fashion. Although it was supposed to have been torn down after the war, the housing authority kept it running until 1969, which is when I first learned about it. The project was then suffering a 30-percent vacancy rate because of its rundown condition. Its open, unkempt grounds and the unfinished, cement block buildings made it stand out against the surrounding streets of privately owned, red-brick row houses. The project bore the stigma of public housing, and public housing meant that it was owned by the public and residents' rights were confined to the interior of their units. One had the impression that intrusion by strangers would go unchallenged.

Thirty-two percent of the project was occupied by elderly whites, 29 percent by African-American families, and 24 percent by Puerto Rican families. Intergenerational and interracial conflict was common on the undefined public grounds. Interviews I conducted with residents revealed that they were fearful of being victimized by criminals, both during the day and in the evening; they had severely changed or curtailed their patterns of activity as a result of the new presence of gangs and drug dealers; and they felt they had no right to question strangers as a means of anticipating and preventing crimes.

Teenagers from surrounding streets used the grounds as a congregation area, instilling fear and anger in many Clason Point residents. To better understand how residents perceived the project, I asked them to draw maps of those areas they thought most dangerous. Most residents drew the same kind of map. The only area they thought safe was the one immediately around their home. Everyone also declared the public open space in the center of the project as the most dangerous.

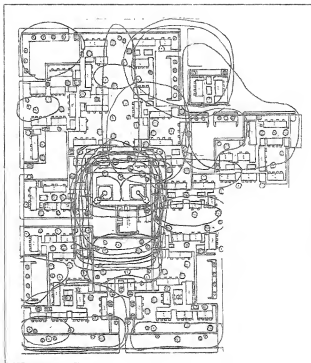



Figure III-3:
Composite of fear maps produced by residents.

The housing authority had a small modernization budget available for improving the project. It was slated for adding a stucco surface to the cement block to reduce penetration of cold air, replacing the roofing and boilers, and adding a little play equipment. I hoped we could stretch these dollars significantly to change the look and function of the entire project. The physical modifications I planned for Clason Point had these goals:

- To increase the proprietary feelings of residents by subdividing and assigning much of the public grounds to the control of individual families and small groupings of families through the use of real and symbolic fencing.
- To reduce the number of pedestrian routes throughout the project so as to limit access and to intensify the use of the remaining walks. Only those walks that passed in front of the units would remain in use, and these would be widened to allow them to be used for play and sitting areas. New lighting would be added to improve visibility and to extend the use of the walks into the evening.
- To intensify tenants' surveillance of the grounds by giving them a greater identification with the grounds.
- To improve the image of the project by resurfacing the exterior of the existing cement-block building and by further identifying individual units through the use of varying colors and resurfacing materials.
- To reduce intergenerational conflict among residents within the project by assigning specific areas for each group to use.

Redefinition of grounds

Using 6-foot-high fencing that looked like iron, but was actually inexpensive hollow tubular steel, I created real barriers to define and secure the rear yard areas. The number of families grouped in each rear yard cluster was determined by the existing layout of buildings. The clusters ranged from as few as 12 dwellings per cluster to as many as 40.

Figure III–4:
Six-foot-high tubular steel fencing defines the collective rear yards of residents, allowing them to place picnic tables and other outdoor furnishings there for the first time.

The 6-foot fence defined 50 percent of the previously public grounds located at the rear of the units for the private use of individual families. The low concrete curbing, placed adjacent to the public walk in front of the units, served to redefine an additional 30 percent of the public grounds as private front lawn. These were symbolic barriers. It should be noted that both the fencing and curbing only defined collective areas, not individual front or rear yards. If residents desired to further define the boundaries of their own front or rear yards, they had to install their own individual side fencing. Most of the residents chose to do so after the first year.

Figure III–5:
Collective front yards are defined by the new concrete curbing. A new combination lighting, seating, and planter helps residents use and identify with the central walk.

To improve the usefulness of pedestrian walks and to attract residents to them, I designed a combination planter-seating-lighting element that would be placed in the center of the walk at intervals of about 40 feet. This new, decorative lighting served both to highlight the main public walk and to make the benches usable at night. The lighting also improved residents' surveillance potential and resulting feelings of security.

Figure III–6:
Vandalized tiles and mailboxes in a highrise.

A small battle ensued with the housing authority about the decorative lighting. They had never allowed themselves to use anything like it before. They found my lights too low and too delicate, and therefore too vulnerable to vandalism. Their rule was to provide highway-type lighting fixtures that were so high they could not be easily reached. These had plastic covers that could withstand being hit by stones. I argued that the residents would take pride in the new fixtures with their spherical glass globes and would not want to vandalize them. The housing authority again acquiesced—against their better judgment—but the new fixtures looked glorious at night. They provided a row of soft, domestic scale lighting that showed the way to the front doors of the units. The new lighting was not vandalized.

Figure III–7:
Small play nodes—as little as a basketball hoop and an adjacent bench—are located to serve small clusters of residents.

Housing authorities sometimes get into an escalating spiral by advocating vandal-resistant products. These products are so institutional looking, one expects to see them in prisons. As an example, I cite the large yellow tiles that are commonly used in corridors (figure III–6).

These materials are an unflattering reflection of the residents. They are so demeaning, they invite vandalism. Of course, once they are vandalized, the housing authority embarks on a new search to find even more

vandal-resistant, and inevitably, uglier materials to replace them. At Clason Point, I broke out of that cycle by saying, with my fixtures, that the residents were special. The quality of the fixtures reflected on the residents. They evoked pride and care. The residents did not want to see them vandalized.

At selected intersections along the primary paths, I created play nodes for young children and teenagers. I put benches next to these play areas to allow other children and adults to sit and watch the play activity.

Resurfacing of buildings

As part of the effort to remove the public housing image of Clason Point, I opted for a slightly more expensive resurfacing treatment that would make the stucco look like brick and stonework. This finish could be applied in a range of different colors, and rather than choose the color combinations myself, as most architects would insist on doing, I had the contractor put up a wall of samples and let individual tenants come and select their own colors. This became an event out of all proportion to its significance. Entire families came out together to stand before the sample wall to debate among themselves and with their neighbors what colors would be best for the units in their row house. This was exactly the kind of involvement with, and commitment to, the improvements I was looking for.

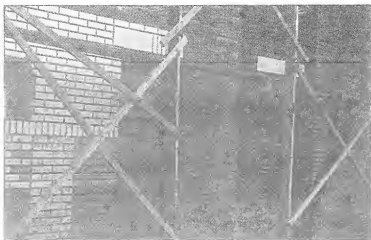



Figure III–8:
Wall of samples showing residents the range of wall surfaces and colors available to choose from for their units.

I hoped that resident involvement in the process would increase their sense of individuality and proprietorship and that this would not only result in greater care and maintenance but in increased watchfulness and greater potency in dealing with gangs and drug dealers.

Figure III–9:
The central area at Clason Point before modifications. This area was identified by residents and police as the most dangerous of the project.

Redevelopment of the central area

In the premodification interviews, tenants identified the central area as the most dangerous part of the project. This, they claimed, was where pushers congregated, where neighborhood addicts came to meet connections, and where one was sure to be mugged at night. On further observation, I found that the area was also used by teenagers, of both sexes, who congregated in one corner of the square after school. Younger children would occasionally throw a ball around here, but because the ground was uneven, intensive ball playing was difficult.

As Clason Point was almost devoid of play and sitting areas, I decided to transform this no-man's land into an intensive community recreation area for all age groups. By peopling it with young children, parents, teenagers, and the elderly, I felt the residents could expunge the drug dealers. Because this central area was also located at the intersection of a few of the newly created walks, I thought I could turn it into a heavily travelled, well congregated, and inviting area by treating it with the same lighting, play equipment, and seating I had provided elsewhere.

As the area was to serve three different age groups, I tried to create three zones that would each have a different look and character. I designed the area for the elderly in a conservative, orderly, and restrained manner. In contrast, the teenage area was designed using curvilinear patterns, intense colors, and large bold rocks. These two areas, representing the prime contenders at any housing project, were separated by a large, defined central play area for younger children.

Figure III–10:
Plan for the conversion of the central area into a facility serving, from left to right, the elderly, young children, and teens.

I had hoped that all this activity would transform this dormant and frightening area into the most alive and safe area of the entire project—that it would become the new focus of Clason Point.

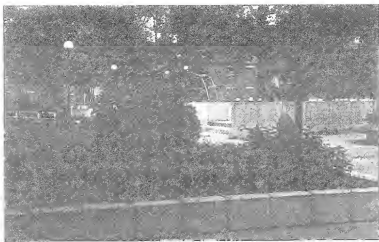



Figure III–11:
The central area as modified. Note that the extended front yards of neighboring homes now border the central area, bringing more under residents' control.

I had hoped, too, that my first step in defining the collective front and rear ground areas would encourage residents to further define them into their own individual yards. Would they see the opportunity to install their own side fences and plant grass and shrubs? The housing authority certainly had no intention of doing that. As it was, they saw the new curbs and fencing as barriers to their large mowers.

I anticipated that once residents realized that no one else had access to these areas, they would begin to place their own things in them. This would make them possessive of them, and they would begin to take care of and guard over them. This proved to be the case.

Figure III–12: *Revised plan of Clason Point showing 90 percent of the grounds assigned to individual families.*

But I also created areas requiring joint maintenance that were assigned to groups of 8 to 12 families. These had little to no success. They were only cared for when one adjacent family took it upon itself to do so. If that area was then misused by another adjacent family, the family that was taking care of it abandoned their effort. The lesson here is: Try to subdivide all the grounds and assign every scrap of it to individual families.

The reassignment of public grounds was undertaken with the intention of expanding the domain that residents felt they controlled and in which they felt they had the right to expect accountability from strangers. I theorized that this reassignment would lead residents to watch the users of the grounds and walks more carefully and to set up in their own minds expectations about what kind of behavior would be acceptable in these areas. As a psychologist on my staff put it, "This reorganization of grounds will set up a dependent relationship between spatial organization and social expectations, and we should find that the informal expectations on the part of residents will become more exacting and differentiated. By eliminating the functionless no-man's land that no resident can control, we should also reduce crime and fear of crime. Tenants should feel they now had the right to impose social controls and pressures on strangers and neighbors." I could not have put it better myself.

Effectiveness of the modifications

The first year after the modifications took place at Clason Point, the residents raked the topsoil of the grounds in front of their homes and planted the grass seed that was made available to them by the housing authority.

To the surprise of many residents, the grass came up in abundance, and the ground surface changed from packed dirt to a carpet of green.

Figure III–13:
View of internal walk at Clason Point before modifications.

Residents then began to demarcate their own front and rear yards by putting up smaller, intervening fences—in many instances, the better to distinguish their patch of success from their neighbors' inadequate efforts.

Not to be outdone, unsuccessful residents plowed up the hard ground once again, added mulch which was again made available by the housing authority, and reseeded more carefully. In fact, they had acquired the knack of putting in seed, watering, and fertilizing by watching their successful neighbors do it. To the delight of those residents new to gardening, the grass came up by itself in the spring of the second year and was even more lush than the year before. This prompted residents to invest in small shrubs, trees, flowers, and garden furniture.

Figure III–14:
View of the same internal walk as in figure III–13 after modifications and residents' response with planting and further demarcation.

Now there may be those who will wonder at what I have just described and, perhaps, take offense at it. Was this whole effort no more than a gardening course for public housing residents? I have even been accused of implying that low-income African Americans don't know how to grow grass. The whole exercise, of course, has nothing to do with gardening; it has to do with providing

people with the opportunity of taking control of the space and activities *outside* their dwellings, with giving them an environment to live in that enhances their self-image and evokes pride, and finally to allow them the opportunity to themselves improve their space so that their identity with it is reinforced. The bottom line is that by subdividing and assigning all the previously public grounds to individual families, we have removed it from the gangs and drug dealers.

In the third year after the modifications, the small shrubs had grown a few feet and the perennial flowers had expanded their root system and come up in abundance. Residents now began to expand their concerns beyond their own front yard to the public sidewalks and concrete planter in the center of the walk. On a systematic basis, residents began to sweep the public sidewalks in front of their homes, particularly when it appeared as if the authority's maintenance staff were derelict in their duties. Residents had begun to see the public sidewalks as an extension of their dwellings.

Figure III–15:
Before and after photographs of an area of Clason Point. The original layout provided no grounds in the front of units for individual residents. In our site redesign, the central green area, which was largely neglected, was removed and residents were given their own front yards, which they quickly improved. A play node is shown at front left.

We had anticipated that the residents' new assumption of grounds care would meet with a positive response from the housing authority maintenance staff because it would decrease their workload. The opposite was the case. The staff complained that the new curbing, fencing, and concrete planters prevented them from using their power equipment; too

much work would now have to be done by hand. A few months after the completion of the modifications, the grounds supervisor at Clason Point put in for additional manpower to handle his new workload. We were informed of his request by an anxious director of housing management who had also hoped that the grounds modifications would reduce their workload. I suggested a site visit.

Following a site visit, the central office concluded that, if anything, the grounds staff could be cut back. This decision was not implemented immediately, however, for fear of antagonizing the union. The response of the grounds staff was to slow down their performance and allow garbage and litter to accumulate in the public walks and at the garbage dumpsters. Residents responded by cleaning up some of the sidewalks and dumpster areas themselves, for the first time in the history of the project. The slowdown by grounds maintenance personnel continued for 6 months and was finally resolved when the housing authority replaced the grounds staff supervisor with one who felt comfortable with a policy that allowed residents to care for the grounds themselves. The supervisor, in turn, redirected his staff's activity toward the maintenance of the public walks and play facilities. The following year, the project's grounds maintenance staff was cut in half and the extra men moved to a neighboring project.

Figure III–16:
The 6-foot fencing that defined the collective rear yards stimulated individual residents to further define their own individual rear yards. This removed much of the overall grounds of the project from access by criminals and gangs. It also limited the movement of those criminals who lived within a rear yard cluster.

The overall crime rate in the development (including breach of housing authority rules) dropped by 54 percent in the first year. The premodification monthly average overall crime rate at Clason Point was 6.91 crimes per 1,000 residents and the postmodification average was 3.16 crimes per 1,000 residents. The average monthly burglary rate per year dropped from 5.15 per 1,000 residents to 3.71, a 28 percent change. The average monthly robbery rate dropped from 1.95 per 1,000 to 0.

The average monthly assault rate dropped from 0.53 per 1,000 to 0.31, a 42 percent change. The number of felonies during evening and nighttime hours decreased by more than one-half. For the serious crime categories—burglary, robbery, and assault—the average crime rate was reduced by 61.5 percent.

The percentage of people who felt they had a right to question strangers on the project grounds increased from 27 to 50 percent. Residents' fear of crime was reduced even more dramatically than the actual crime rates and, for the first time in years, most residents said they had little fear of walking through the project grounds at night.

The project, which was 30 percent vacant before the modifications, not only achieved full occupancy, it acquired a waiting list of hundreds of applicants.

Learning from experience

Perhaps the most serious mistake I made was allowing the existing arrangement of buildings to determine the size of the collective rear yard groupings. Residents in the larger groupings had difficulty keeping the gates to their collective rear yard area locked. There was also more uniformity in the quality of maintenance of rear yards in the smaller clusters than in the larger. Had I realized how much variation would occur with the size of the cluster, I could have subdivided the larger clusters simply by running a 6-foot fence across them, and thus cut them in two. Whether to save the cost of a fence or from oversight, I had forgotten my own basic rule: the smaller the number of families that share an area, the greater the felt responsibility for maintaining and securing it, and the easier it is for people to agree on mutually acceptable rules for using it.

The most successful play and recreation areas proved to be the small nodes I provided to serve a small and distinct group of residents. The large central play area initially attracted a large population from all over the project—adults, children, and the elderly—and they did succeed in driving out the drug dealers. However, the large size of the area also produced turf conflict between the residents living immediately adjacent to it and those coming from the other end of the project. This soon resulted in the vandalizing of equipment by the distant residents who, at times,

felt excluded. If they could not use it, no one would. It was also a mistake to try to create three zones within the one area to serve teenagers, young children, and elderly. The elderly soon found themselves overwhelmed and threatened by teenagers, even in the area specifically designed for them: that is, the one containing the formally designed checker tables and benches.

Figure III–17:
Play node for young children: a sandbox and a climber located to serve a small cluster of families. Note how the new 6-foot fencing has prompted residents to produce gardens in their rear yards at left and the new curbing to create their own front yards.

The lesson to be learned from this is that if one has the opportunity of placing 10 pieces of play equipment in a housing development, it is better to put 1 piece of equipment in each of 10 areas so that it is there for the specific use of a particular group of residents, than to group all 10 pieces in 1 central public area for the use of all residents.

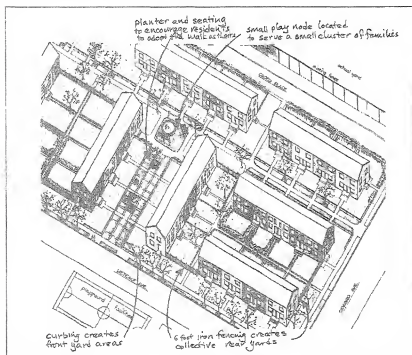



Figure III–18:
Aerial view of a small portion of Clason Point showing how 6-foot fencing was installed to create collective rear yards and curbing to define front yards. Note the location of the play node serving a small cluster of families.

Dispersed, Scattered-Site Public Housing in Yonkers

In 1985, the city of Yonkers, in a nationally prominent civil rights case, was found guilty by the Federal court (Southern District of New York) of severely segregating its public and assisted housing. Some 6,000 units had been concentrated into the city's older, southwest section—an area one-eighth the size of the entire city. Twenty thousand people lived in this housing; the remaining seven-eighths of the city housed only 80,000 people, or four times as many.

Figure IV–1:
Map of Yonkers showing the concentration of public and assisted housing in downtown southwest Yonkers and the location of the seven new scattered-site projects.

The existing public housing projects had been built as large, high-density highrises and walkups, ranging in size from 278 units to 550 units. They were located only a few blocks away from each other, producing a very high overall concentration of low-income, minority population. The remedy, no more than a token really, required that 200 new units be built in the white, middle-class areas of the city that had previously excluded public housing.

Figure IV–2:
Existing public housing in Yonkers: the School Street project.

After stalling for much too long, the city was told to appoint an outsider to direct the construction of the mandated housing. I was selected in a process I will describe shortly, and used the occasion to apply the principles I had evolved in the Clason Point project to the construction of the housing.

Yonkers is the first suburb one encounters driving north from New York City. It dates from the turn of the century when it functioned as a factory town. Its older, urban downtown, situated on the cliffs over the Hudson River, is where the public housing was concentrated. This urban core is surrounded by a mix of suburban areas ranging from modest single-family houses on small lots to large mansions on one-half-acre lots. The entire city is only 6 miles long by 3 miles wide and is interlaced with highways serving the suburbs to the north. Sprinkled along these highways are stretches of old and new, privately owned highrise apartments occupied by white working- and middle-class families.

Figure IV–3:
Map showing the location of Yonkers relative to New York City. Also shown is the location of the Clason Point project in the south Bronx.

During the period of the court case, Yonkers' public housing projects, like many throughout the country, were known for housing drug dealers and prostitutes. The projects were also said to be the cause of much of the crime in their surrounding communities. Many of the criminals who lived in the projects were little more than children. Teenagers carried automatic weapons openly and were often bold enough to screen people who came and went to make sure they were not police.

The public housing residents who were to move into these 200 new units were to have the same profile as the existing residents—that is, more than half would have public assistance as their source of income, most of these being AFDC families. The residents of the new housing were to be chosen by lottery on a 50/50 basis from existing public housing tenants who wished to move into the new housing and from a waiting list of potential tenants.

Figure IV-4: Aerial view of east Yonkers showing typical suburban housing and the Catholic seminary. The dense public housing of southwest Yonkers can be seen at the back.

After a 6-year trial and an additional 7 years of the city fighting me every step of the way, the scattered-site housing is now in place without any of the dire consequences predicted by its opponents. It did not introduce crime into the middle-class neighborhoods, it did not reduce property values, and it did not produce white flight. It is a solution that is already becoming a model for cities across the country who wish either to voluntarily desegregate their public housing or are under court order to do so.

Figure IV-5: Existing public housing in Yonkers: the Schlobohm project.

Yonkers residents are a mixture of ethnic and religious groups: Irish, Italian, Polish, Jewish, African, and Hispanic Americans—each of whom wears their heritage proudly. This has produced a rich and exciting city with a multitude of churches, social centers, ethnic restaurants, food stores, and bars. Each ethnic group further reinforced its identity and political strength by concentrating itself in its own distinctive geopolitical ward. In

Figure IV–6:
Existing public housing in Yonkers: Mulford Gardens.

the past, this ward structure had proven useful in serving the narrow interests of each ethnic group. However, it proved devastating by preventing the city as a whole from acting in its greater good by quickly responding to the original segregation complaint.

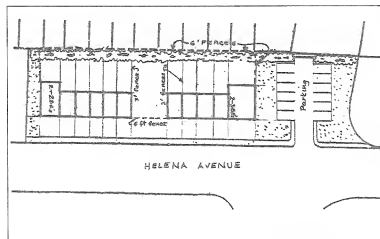
Much of the city's resistance to implementing the 200-unit remedy stemmed from everyone's assumption that it would be built along the lines of the existing public housing. Two years after the Federal court decision was issued, the city had yet to locate a single site or prepare a single housing plan. At that point, the plaintiffs petitioned the court to inform the city that if it could not act on its own behalf to implement the remedy, it would either face costly daily fines or be required to appoint an outside housing advisor to do the work that no politicians or city employees could allow themselves to do—that is, find the sites and prepare the plans for the housing. Admitting, finally, that it would be political or professional suicide for anyone to do this work, the city, under a deadline from the court, set about finding a housing advisor. They gave me the job, but not for reasons I cared for.

Prior to my appointment as housing advisor, the plaintiffs in the case (the U.S. Justice Department and the Yonkers chapter of the National Association for the Advancement of Colored People (NAACP)) had identified two former school sites they wanted used for the public housing. A highrise complex was to be put on the larger of the two sites and a three-story walkup on the other. The city objected, saying that this would be a replication of the physical construct of the existing public housing projects in southwest Yonkers and would serve to destabilize the surrounding neighborhoods. The plaintiffs replied that this was further evidence of the city's racism, and they did not care for the city's notion of what constituted destabilization.

Figure IV–7: *Typical site plan for a 12-unit site.*

After interviewing a dozen candidates, the mayor and the city council chose me to do the work because in my planning books, *Defensible Space* and *Community of Interest,* I had advocated an approach to racial and economic integration that would not destabilize the host middle-income community. Otherwise, I had argued, what would be the long-term benefits to the public housing residents? In my interviews with the city I had stated that, on the basis of my past research, I would advocate the use of townhouses in a scattered-site format. That is, I would scatter the units throughout the white, middle-class areas of the city rather than concentrate them in one or two specific sites as was proposed by the plaintiffs.

I had thought that this was why I was selected, but I later learned that the city was secretly hoping that once I became familiar with the crime problems in the existing public housing complexes in southwest Yonkers and then saw the pastoral beauty of the middle-class suburban settings of the rest of Yonkers, I would appeal to the court to modify its ruling. This was, of course, not facing reality—a problem that plagued Yonkers from the beginning of these proceedings. This delusion on the part of the city was surprising, because in my interviews, I had made clear that although I would ensure that the housing would be built using Defensible Space principles, I also felt obligated to ensure that it would, in fact, be built. When it became clear that I was making progress in selecting sites and getting the housing built as promised, the city countered by refusing to pay me. After three months of non-payment, the Federal court decided that I would henceforth work for the court rather than the city, and ordered the city to pay me on threat of contempt.

Design principles

By locating the 200 public housing units on 7 sites in Yonkers, I had hoped to limit the number of units at any 1 site to a maximum of 24. This decision came out of my research that showed that crime increased with the number of units in a housing project. I also planned to design the housing to look like that of the surrounding community so as to make it unnoticeable.

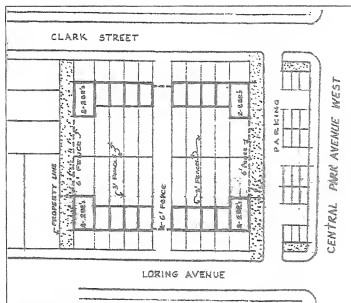



Figure IV–8: Typical site plan for a 24-unit site.

The city had said it could not implement the remedy because there were no sites available. I used a variety of techniques to tease out new sites: I reviewed the city's annual report to the State listing all tax exempt property. This enabled me to identify all city, State, and Federal owned land and buildings—including empty buildings, such as schools—that might be used for housing. I used aerial photographs to locate all empty parcels and then flew over the entire city with a helicopter to view them for suitability. I examined listings of all State, city, and county park land to determine which parks were not being used. With these techniques, I was able to locate more than 20 sites that were suitable for the remedy. Most of these sites were owned by the city, enabling me to avoid the purchase price and the delay of acquiring the land from private owners. Private land is scarce and expensive in the middle-class areas of Yonkers.

But the court made the error of allowing the city to reject some of my sites, and the city rejected those that lay within the domain of the most vociferous and demonstrative of opponent groups, the Save Yonkers Federation. This was because no politician felt he would survive re-election if he defied this group. As it was, a different mayor was elected every 2 years during this period, with the hope that someone would succeed in defying the court. During the heyday of its defiance, the city went so far as to elect a mayor because he had promised to hire the

most expensive lawyers available and to lie down in front of the bulldozers himself to stop the housing from being constructed. The city spent more on attorneys' fees to stop the housing than I spent on building it—more than $20 million. The mayor put on a good show but succeeded in stopping nothing. He was not re-elected.

The city was nevertheless successful in rejecting many of my sites, even to the point of putting undue pressure on the Cardinal of New York to get him to back down from a site I had selected on an outlying portion of the seminary property. In the end, I was left with only seven sites. And because of this, I was forced to put as many as 48 units on 1 site and 44 on another. Their comparatively large size meant that these two sites would have to have their own internal street systems, at increased cost. But more importantly, I would not be able to make them disappear into the fabric of the city's neighborhoods. I was also worried that their isolation from surrounding middle-class housing would allow a criminal subculture to materialize and flourish that the public housing residents, alone, could not control. Strangely, the city preferred that I choose a few large, isolated sites rather than many, small sites that were integrated into the community. That way, argued the city, fewer areas would be contaminated by the contact. They could not understand my argument: the smaller the site and the greater the contact, the more the middle-class neighbors would be able to exert their values and control.

In an endeavor to win communities over to the scattered-site plan I was advocating, I systematically met with community and religious leaders in every affected neighborhood of Yonkers. This led to requests for me to give formal presentations to general meetings of a few hundred residents. Some of these meetings were rowdy, but many were quite civil and allowed for a good exchange of ideas. I explained that I was there to implement the remedy in the best way I could, and was seeking the community's assistance in doing so. But many residents attempted to re-argue the court case in front of me. I told them the case could not be reopened. At one meeting, feelings ran so high, I finally had to say: "Hold it a second. Look!" I walked over to the nearest wall bordering the auditorium stage, raised my fist, and pounded it three times as hard as I could. The noise from the pounding thundered through the auditorium. People went totally silent. I returned to the microphone and, holding my

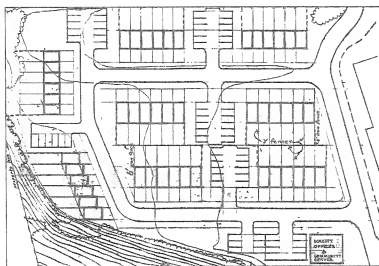



Figure IV–9:
Typical site plan for a 48-unit site.

hand in the air with obvious pain, said: "That wall is the Justice Department. And this fist is you. All you are doing with your high-priced lawyers in revisiting the case, is injuring yourselves. It is time to let it go and help me find a remedy that will work to everyone's benefit."

I do not know how useful these meetings were. After a while, the vociferous elements in the city made it a practice to come and disrupt every such community meeting. In some instances, the police had to escort me out for my own protection. I stopped holding them.

Figure IV–10:
Sketch of a group of row-house units for Yonkers as submitted by one of the developers.

The second Defensible Space design directive I used was to insist that the housing have no indoor or outdoor areas that were public. All areas of each unit and site would be assigned for the specific, private use of individual families. This is why I chose two-story row houses as our building type rather than two-story walkups that have interior public areas. This decision involved a major dispute with the regional office of HUD that advocated the use of walkups, if not highrises.

The grounds of each site were to be fully subdivided and assigned to individual units. Each family was to have its own front and rear yard, and the front entry to each unit was to be located directly off the street.

Each family's rear yard was to be defined by a small fence, and small clusters of rear yards were to be collectively fenced-off from the surrounding streets by a taller, 6-foot fence.

Figure IV–11: *The fencing-off of the rear yards in the Yonkers scattered-site housing. Individual yard fences are 3 feet high. The 6-foot fences defining the collective rear yard area can be seen in the foreground and at rear.*

It is interesting that when the judge I was working for visited the housing when it was completed, but not yet occupied, he looked at the fenced-off rear yards and said, "They look like pig sties; is it really necessary to have the fencing?" I explained that the rear yards would take on a very different character once they were occupied. For the first time in their lives, residents would have a place immediately outside their dwellings they could call their own: their own place in the sun where they could leave a young child to play by itself without fear of it being harmed. Once they realized that, they would begin to customize and manicure the yards. And they would become rich with flowers and objects that reflected their personalities. The judge looked at the myriad of fencing again, shook his head and said, "I hope you know what you're doing."

With this design, of course, I primarily hoped to eliminate all the troublesome, crime-ridden areas typical of multifamily public housing projects. There were no nebulous public grounds for gangs and drug dealers to roam. There were to be no public lobbies, no corridors, no fire stairs, no elevators. There were none of the spaces that typically characterized not only highrise public housing, but row-house developments as well (see discussion of Defensible Space concepts in chapter I).

The principle used throughout is that residents will jealously guard and maintain that which is theirs—even when they are renters rather than owners. The second principle is that by dividing and assigning spaces to individual families and to small collectives of families, we limit the operating turf of the criminal element that may be living among the residents.

Developing this principle further, I decided to do away with the collective garbage dumpsters that normally serve large groups of residents in

Figure IV-12
Typical garbage dumpster serving public housing.

public housing projects. These would be replaced with individual garbage cans, serving each unit. Every family would have its own garbage cans, and they would be placed in concrete pits in the ground along the front walks leading up to the entry door to their own house. That way the garbage cans too would be within the territorial domain of each family, and their maintenance would reflect on that family. The large dumpsters that serve as garbage collectors for most public housing projects are located in public areas where no one identifies with them. They are always overflowing with garbage and attract rats and roaches. Various stratagems have been devised to make them function better, but in the scattered-site housing in Yonkers, I simply refused to allow them to exist.

Figure IV–13:
Individual garbage cans along the walks leading up to each unit in Yonkers' scattered sites.

I have explained the garbage can decision as if it were made by me, alone at my desk. But as with most of my design decisions in Yonkers, everyone became involved and there was a big hullabaloo about it. The city objected vehemently that this would put an undue strain on its sanitation department. I pointed out that we were asking no more for the public residents than the city provided to occupants of single-family houses. The city backed down after it was agreed that each family would be responsible for bringing its garbage to the curb on the morning of garbage day. The HUD regional office objected to our garbage can decision on two counts: one, that individual cans buried in concrete sleeves for each

household would be far costlier than providing a collective dumpster; and two, that the residents would be unable to look after their own garbage cans. HUD argued that these individual cans would have to be pulled out eventually, at great cost, and replaced by dumpsters.

The housing authority's consulting architect was also nervous about my placing the garbage cans along the front walks. He suggested that maybe the individual garbage cans could be stored in the back yards of the unit and then brought out on garbage day. But to do this meant that the garbage cans would have to be stored in the already small rear yards, and, furthermore, they would have to be brought through the house on garbage day. The housing authority architect suggested that we could avoid the latter by providing a walk between the individual rear yards that led to a gate that opened onto the street. A collective place would then be provided at the street for all the garbage cans to be positioned for pick up by the garbage trucks. I explained that this proposed solution introduced three problems: (1) it meant introducing a public walk into the rear yard areas which were now fully private; (2) it would compromise the security of the rear yard areas by introducing gates that opened to the public streets (we had learned from our Clason Point experiment that it took only one family to decide to leave this gate open for everyone's security to be affected); and (3) having all the garbage cans grouped in a designated "public" spot, even if only on garbage day, would be creating the same kind of problem produced by dumpsters. The operating rule was no public spaces, and we would have to stick by it.

This dispute was settled by Pete Smith, the housing authority director and my salvation in this entire effort. He said that he saw potential problems with each proposal, but because we were gambling on the validity of the Defensible Space hypothesis, we should be consistent throughout, and go with what I had proposed. This was his polite way of also saying that it would be on my head if it went wrong. I accepted that, appreciating that these are the risks one must take to test the value of one's convictions.

I went on to spell out that the design of each unit was to carefully echo the style and materials of the surrounding middle-class single-family houses. Brick, peaked roofs, bay windows, and staggered facades were to be used to emphasize the individual units within a row-house cluster.

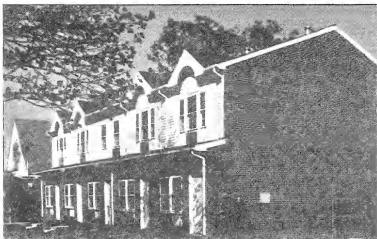



Figure IV–14: Completed scattered-site units in Yonkers (foreground). Existing, privately owned, single-family housing can be seen in the background. The new units seek to capture the look and feel of the private housing.

All of this was accomplished within HUD's cost guidelines by using factory-built housing.

The use of factory-built housing minimized onsite protests and potential vandalism by opponents of the housing by limiting the onsite construction time. The housing units arrived 95 percent complete from factories approximately 100 miles away and were placed on foundations (that had been prepared earlier) during the course of a day. The ability of the local residents and politicians to complicate construction by influencing the unions was also minimized by having most of the work done in communities distant from Yonkers.

Problems in controlling the design process

The decisions to scatter the 200 units over 7 sites rather than concentrate them on 2, to use row houses rather than highrises or walkups, and to use Defensible Space principles in laying out the grounds may sound rational, given the history of the case, but the process of getting these decisions accepted by HUD and the plaintiffs proved difficult.

Much of the reason the Yonkers community bitterly resisted the court order was their expectation that the new housing would be large, highrise developments that would devastate their surrounding areas. Even though I, as an officer of the Federal court, had promised to build row houses on small sites scattered throughout the city, the community did not believe me. My promise might be sincere, but neither HUD nor the housing authority was able to inspire much trust among the local residents. When trying to obtain housing sites, it is normal practice for housing authorities to tell communities that they will only be putting up a small number of units. But once a site is acquired and approved for the use of public housing—a difficult process in itself—the number of units somehow doubles or quadruples. It is not that housing authorities, or

HUD, are being intentionally deceptive, it is just that it is so difficult to acquire a site, that once it is in place more money can usually be found by HUD for additional units. Housing authorities are then unable to resist increasing the number, even if it means constructing high-density walkups or even highrises. Of course the price for such a breach of faith is that the next site becomes even harder to find and get approved.

The New York City region is a very dense area. The HUD regional Office in New York City, therefore, had very little history of building anything but highrises and walkups. The notion that we would be proposing the construction of row houses in Yonkers was an anathema to them.

The plaintiffs in the case, the Justice Department and the Yonkers chapter of the NAACP, also had problems with our decision to limit ourselves to row houses. The Justice Department attorney in the case wanted to put 200 units in 2 highrise towers on the largest site. Her idea was to make these an equal mix of public housing, moderate-income, and market-rate units. That site would then serve 67 public housing units. I pointed out to the plaintiffs that the history of such mixed-income developments (particularly in Yonkers) was that they became fully occupied by low-income families in a short period of time. This is because it is difficult to keep market-rate tenants living among public housing residents when they have other options. When management is then unable to attract new market-rate tenants to replace the old, they have no option but to accept low-income tenants with Section 8 certificates (Section 8 is HUD's rent subsidy program) to fill the vacant units.

The end result would be a 200-unit low-income, highrise project located within a middle-income community composed of single-family houses. This would virtually guarantee destabilization. In fact, it would replicate the situation in southwest Yonkers that led to the case to begin with. The entire rationale for the court decision would then be undermined. For what would be the purpose of enabling low-income families to enjoy the benefits of living in a middle-income community if that community then quickly turned into a low-income community?

The attorney for the Justice Department said that my argument was fallacious: The issue was not the nature of the host community but the exclusion of public housing residents from an area that should have been open to them. The NAACP attorney said that my arguments reflected the racist

attitudes of Yonkers residents—attitudes that had produced the case in the first place. He, for one, had no problem with the entire 200 units turning into a low-income project, and if the surrounding community then wished to leave, so be it. The Justice Department attorney reasoned that the decline of the community would just make available additional lower cost housing for his client group.

The argument for the mixed-income development presented by the Justice Department attorney was that it would guarantee a mix of income groups, rather than a concentration of low-income families. My counter to that was that the community surrounding the new public housing was already middle-income and stable, so there was no need to create an artificial mix within the new project—particularly if we could not sustain that mix. If the proposed large, mixed-income development became all low-income, the result could destabilize the surrounding middle-income community. In informal discussions with all parties, the court accepted my reasoning.

The next problem I encountered was getting the HUD regional office to accept row houses as the building type rather than walkups. HUD preferred walkups because it thought they would be less costly to build. Regarding my Defensible Space rationale, HUD said that, as an agency, they had never accepted it. I prepared a long memo to HUD and all the parties in the case, pointing out the following, with documented references:

- HUD's manual for the construction of public housing had only two books referenced in it: *Defensible Space* and *Design Guidelines for Achieving Defensible Space,* both written by me. The second book had been published jointly by HUD and Justice.

- The history of walkup public housing throughout the country was not much better than that of highrises, and walkups were being torn down everywhere as frequently as highrises.

- When calculating the cost of walkups versus row houses, HUD was only using the initial construction costs, whereas the big savings in the use of row housing was in the consequent reduction in maintenance, vandalism, and security costs. HUD spends millions of dollars per project every few years repairing the destruction wrought by

the residents in the public areas of highrise and walkup buildings: Our housing would have no such public areas.

- Finally, the New York State Building Code allowed two-story row houses to be built of wood, without a second fire stair, and without the multitude of fire walls required of walkups. These additional requirements actually made walkups more costly than row houses.

City officials in Yonkers, who would have preferred that no housing be built at all, certainly preferred row houses over walkups. They allowed their building department to prepare its own memo supporting my position. These arguments were heard before the judge in the case, and he reminded HUD (a defendant in the case) of the importance of getting the remedy done right, that we had an opportunity to demonstrate that public housing could be built to everyone's benefit in middle-income communities.

The next obstacle we had to face grew out of the method the housing authority and HUD would have to use in soliciting bids for the work. There were two ways open to obtaining bids: the conventional route and the turnkey route. In the conventional route, the housing authority would have its architect prepare detailed construction drawings for the housing on each site and then request bids on them. The problem with this method is that New York State has the Wicks Law, which allows separate subcontractors to submit bids for small portions of the work. These bids must be considered by the housing authority along with bids by general contractors for the entire job. The housing authority would then have to serve as the general coordinator in evaluating and accepting these small bidders. Such projects have not only proven to be more costly, they are difficult to administer and frequently stall in irreconcilable disputes between subcontractors.

The turnkey route allows the housing authority simply to issue a request for proposal (RFP) from developers in which only the sites and the number of units per site are identified. The RFP also spells out HUD's basic standards for construction and site development. The use of the turnkey method thus allows the authority to avoid the requirements of the Wicks Law.

With the conventional route the housing authority specifies exactly what it wants in terms of design, but with the turnkey method it leaves all that

to the discretion of the developer. The purpose of the turnkey process is to allow the developer to build what he knows how to do best and to turn over the finished housing to the authority when it is ready for occupancy.

The housing authority and HUD both preferred the turnkey method, but how could we be assured of getting the housing designs and site plans we wanted? The authority and I proposed to HUD that we include a set of written design guidelines in the RFP, along with schematic site plans that illustrated how to produce Defensible Space plans for each of the seven sites. The regional office of HUD objected, stating that this would severely restrain the developer by keeping him from using his own approach and finding the least expensive and, hence, the best solution.

After much argument, HUD agreed to allow a set of Defensible Space guidelines to be introduced into the RFP, but totally vetoed the inclusion of any schematic site plans. The Defensible Space design guidelines issued in the RFP appear in addendum A, which also contains the criteria to evaluate the responses from developers. These criteria place important weight on incorporating Defensible Space principles.

The designs submitted by developers in response to the first issuance of the RFP proved unacceptable. The housing authority chose not to make any award. The developers and their architects did not seem to grasp what we were after. The written design guidelines, alone, were not enough to evoke either the image of the buildings or the site plan layouts we desired. It was clear that the developers and their architects had to be shown illustrations of what we wanted. Again, we asked HUD to allow us to include schematic site plans and building sketches, with the explanation that they were there for the developers' enlightenment only, and that they need not be followed. But HUD replied that the developers were not fools, they would soon guess that if they did not follow the schematics, they would not win the award. HUD nixed the inclusion of the schematics in the RFP once again.

The housing authority and I realized that we could not go on issuing RFPs and turning the developers' submissions down, or we would alienate the few developers we could attract. As it was, we were only getting bids from 2 out of 10 developers who had paid $100 for the bid package. I had heard from local developers, many of whom I had gone out of my

way to attract, that because their names had been made public, they were receiving calls from important people in the community, advising them not to bid. The only bids we did, in fact, receive were from developers whose operations were well away from Yonkers, whereas most of the people who had picked up the bid package were experienced local builders.

We decided to employ the following strategy in this second round: When the developers came to pick up their packages, they would find a pile of schematic site plans next to the pile of packages. It was explained to them that they could either pick up the site plans with their bid packages or not. Most of them did. This time we got back three proposals that came very close to giving us what we wanted.

Selection of residents

The public housing residents who would move into the new units were expected to have the same socio-economic profile as those who lived in the old highrises. This is because 50 percent would come from the existing public housing projects and 50 percent from the housing authority's waiting list. The 200 families would be chosen by lottery from a list of 2,000 applicants. A comparison of the profile of the new tenants and those living in the large projects shows that they are identical.

It would be wrong, however, to conclude that just because their profiles were the same, that they were, in fact, identical. Although they had been selected at random, they had first to select themselves as candidates for the new housing. This is hardly random selection. It is self-selection toward the adoption of a new opportunity and lifestyle. And this may not be a desire that is universally held by all public housing residents.

Training of residents

Pete Smith, the housing authority director, believed that tenant training was a critical ingredient to the success of the program: The residents had to be prepared for the move. There were many things they did not know about living in a single family house with its own heat and hot-water system, and they were fearful. This move meant so much to them, they were very anxious to get it right. Smith was overwhelmed by questions. He suggested we bring in a professional trainer: someone who had done

this before. He knew Bob Mayhawk of the Housing Education Relocation Enterprise (H.E.R.E.) who had conducted training programs for a public housing relocation program in Greenburgh, a community north of Yonkers. He had a great deal of credibility within the African-American community and even ran his own radio station. The training program should be intensive, involve four or five sessions, include working with maintenance people in the new units and meeting with the community and the police, and provide the opportunity of going through various procedures that would be followed in case of the need for major repairs or other emergency responses. The training program would cost a bit, and Smith wanted to ask HUD to pay for it.

HUD objected and asked my opinion. I thought that Smith's housing staff might be able to handle the counseling, including his own maintenance people. I was concerned about going overboard in what we were asking HUD to do. But Smith disagreed: The tenants needed someone from outside the housing authority they could trust and feel comfortable with to provide a buffer between them and the complicated world they were entering. They needed an advocate they could ask seemingly dumb questions without feeling humiliated; someone to whom they could open up about their fears and reservations; someone with authority in the community who had been through this sort of thing in his own life. Smith decided he would find the money for Mayhawk's services from the housing authority's own budget.

A five-session program was given to all potential candidates for the housing. The sessions dealt with relocation, home maintenance, interpersonal relations, safety and security, and community resources. (An outline of these sessions appears in addendum B.) Mayhawk proved to be a very effective educator. He understood what the future tenants were worried about, knew what they were ignorant of, and knew how to explain things to them simply and to lead them slowly to an understanding and self-confidence. He said, "It was up to the tenants to make the program work and up to me to train the tenants to do that." Residents still keep in touch with him, and refer to him at meetings. He spoke with different leaders of the opposition in Yonkers and reached out to them. He even hired some of them to help in the training, involving them in the process of acclimatizing the tenants and the neighboring community to each

other. These former opposition leaders became liaisons in the community for the first 3 critical months. It was not by accident that the residents received flowers and baskets of fruits when they first moved in. After the tenants moved in, these trainers went door-to-door to help orient them.

Mayhawk also held meetings among tenants, business people, and community institutions: the latter including Sarah Lawrence College and Yonkers Raceway. He introduced residents to business people who might hire them. These meetings were closed, with only selected members of the public present. Truly open meetings would have deteriorated because the opposition groups would have descended on them, en masse, and disrupted them. The local media were intentionally kept away from both the training sessions and the tenant/community orientation sessions because inflammatory rhetoric had categorized much of their coverage of the case.

Police were also present at these orientation sessions and meetings with the community. Mayhawk emphasized that the housing authority and the police would be on top of everything going on, watching the community, watching the tenants. It was made clear that any tenants involved in illegal activities would be evicted. There were many subsequent turndowns by residents. Of the initial 2,000 applicants for the 200 available units, about one-third dropped out of the process. Residents knew they were moving into a fish bowl and would be under continual informal surveillance. Those involved in drugs or other unsavory activities bowed out. The teenage children of many applicants did not care for the move because the dislocation meant some of their friendships and peer group activity would end. The new developments were an hour bus ride away from the concentration of projects in southwest Yonkers. Many of the families who dropped out said they did so because of their teenagers' objections.

Results

Although none of the residents had any previous experience living in row houses with private front and rear yards, to the surprise of the middle-income residents of Yonkers the new residents quickly adopted the behavior patterns of their suburban neighbors. They planted flowers, further defined their grounds with low picket fences, and installed barbecues. They became

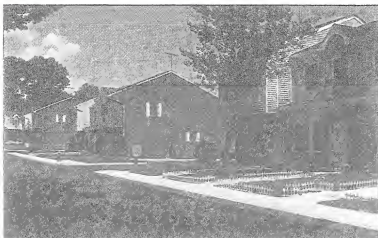



Figure IV–15: Residents' initial improvements to their front yards.

proud of their achievements and jealous of their territorial rights. They even went out of their way to assist fellow newcomers with lawn maintenance.

The housing authority had intended to maintain the front yards of the units itself and, therefore, had kept them free of fences, but the residents set about defining their front yards with their own picket fences and took on the further responsibility of maintaining these yards as well. It must be admitted that these picket fences and, initially, some of the flowers, were made of inexpensive plastic, but the spirit was there, and with time they were replaced by the real thing.

The police found no increase in crime in the neighborhoods surrounding the scattered-site units and no evidence that the gang or drug activity that was prevalent in the old projects had transferred to the new. In an evaluation of adjacent housing, the local newspaper found that there was no decline in property values and no white flight. The Yonkers school board says there is no decline in the quality and performance of children in the schools. Residents of the scattered-site units are now making requests of the housing authority to avail themselves of HUD programs that would allow them to buy their units.

Figure IV–16: Residents' later improvements to their front yards.

Evaluation

The following are excerpts from my interviews with Bob Olson, the chief of police, during the time the housing was put in and for 2 years thereafter, and Pete Smith, the executive director of the housing authority during the entire period up to the present. In their own words:

Figure IV–17: Residents' later improvements to their rear yards.

Bob Olson, former chief of police, Yonkers:

> I was not part of the community mindset when I first came to Yonkers to be chief of police. The remedy order had already been issued, and I actually saw it as my job to change that mindset.
>
> I attended some of the orientation sessions for the future tenants of the scattered-site projects—and their first meetings with small groups from the surrounding community. I was at the lottery. I saw how much they wanted to move in and do better for themselves. They were good people. I remember how excited they got when they learned they had been selected by the lottery.
>
> My job was to convince the white community that their world wasn't coming to an end. I went to speak to community groups all over the east side, adjoining every site. I let them vent about what they feared would happen, then reassured them I wouldn't let any of it occur. Extra patrols would be put in initially—and on an as needed basis—I promised. The surrounding community was made up of people who had moved into Yonkers 2 decades ago and had bought their houses for $60,000 and $70,000; now they were worth $250,000. Their houses were everything they owned. They were worried that prices would plummet when the public housing residents moved in. They knew about the drug

scene and the prostitutes in the projects in the southwest—you only had to drive by to see them hustling on the street corners.

My concern was to make sure that that wasn't transplanted with the residents. My presence, or the presence of my precinct captains, at every orientation session and meeting with surrounding residents and businessmen must have done a lot to show everyone we were not going to tolerate any nonsense from either side. During the move-in and immediately thereafter we provided extra police presence—you know that, you specifically asked for it.

The doomsday scenario never materialized. The stories that were circulating before the moves took place were that thc real bad folks would get into the units and create gangs, peddle drugs, women, etc. Then the neighborhood people would react by screaming and yelling, and possibly demonstrating. The newspapers would hype it all up as usual—accusing both sides of what they themselves were doing. The politicos would then jump on the bandwagon, and we would bc national headlines again.

Some pcople were worried about how the police would react. My men were all Yonkers residents, and some camc from families that were in Yonkers for two and three generations. There is no question that their views reflected the sentiment of the white community. But they were a very professional bunch, reflecting solid police values. Even if their personal sentiments went the other way, I knew that when push came to shove, they would do the right thing. Most of them liked things quiet around Yonkcrs. They didn't want a community in turmoil. They did not want to see the level of risk increase for anyone. They viewed the whole discrimination case as another pain in the butt—people feuding and fighting. They used to say of thc politicos: those dumb SOBs could havc been rid of this wholc thing in the 1980s, if they had only agreed to put 80 public housing units on the east side.

We have had virtually no crime or crime problems from the scattered-site units. After 2 1/2 years of occupancy, the only complaints we have been getting are loud noise and music, someone's car broken into who lived in one of the sites, and kids from the units taking shortcuts to ballfields across their neighbors' property. When the neighbors came out and screamed at them, the kids retaliated by coming back with M80s. That needed some quick fence mending, schmoozing with the kids and the neighbors, asking each to give more than was expected of them in the way of politeness and tolerance. It worked.

You can't blame the neighbors for being upset: six or seven African-American kids with pants hanging below their butts, baseball caps turned backwards, walking across their lawn. We talked to the kids, asked them not to cuss, and not to tangle or argue with the neighbors. I said: "Even if they insult you, surprise them with politeness. That'll defuse them real good." And we asked the neighbors to remember that as tough as they looked, these were just kids. And if they yelled at kids, the kids would yell back—and more. Most of the complaints we get now are over an occasional wild party, and these complaints come from the other housing residents just as frequently as from the surrounding neighbors.

The lesson I learned from all this is that highrises shouldn't be used for anyone but elderly, and that elderly and kids don't mix. The other thing is don't put the poor African Americans in large concentrations. Boyfriends of welfare women come into town from Detroit, or wherever, and set up their women in their own apartments doing drugs and prostitution. And in a highrise, that contaminates the whole building, sometimes the whole highrise project. You have to be able to evict these people, quickly and easily. HUD's procedures take too long and go nowhere.

I like the idea of using women tenants as part of an in-house security force. The housing authority should be allowed to pay them five bucks an hour without HUD expecting to deduct that amount from the rent subsidy they get.

Pete Smith, Director of the Yonkers Housing Authority:

> I don't have to tell you the whole thing is a resounding success. None of the anticipated nasty things happened. There was no transfer of crime from the projects—in fact, there is no crime at all in either the scattered sites or in the surrounding housing. There is no decline in property values in neighboring housing—as our newspaper's own analysis found out—and there is no white flight. Boy, did that newspaper want it to be different. People in Yonkers expected a complete failure. Expectations were so low, we couldn't lose. Ironically, the local newspaper helped us there. They were constantly saying that the scattered-site units would introduce crime, reduce property values, and send everybody running. When none of that happened, the presence of low-income African Americans in their neighborhoods didn't seem all that important.
>
> Actually, we began winning when the community saw the buildings go up and the quality of the designs. They couldn't believe it—couldn't believe that we and HUD had actually kept our word. Then, when they saw the attitudes of residents who moved in—their concern for their grounds, their own policing of each other, their deference to their neighbors—the nightmare simply vanished.
>
> There is still very little one-on-one social interaction between tenants and surrounding residents at most of the sites, but then we expected that. There are occasional community picnics when they do interact, but that's not what I mean. But they know that each of them is there, and behave with respect accordingly, and that's what's important.
>
> There isn't even minor theft among residents on the sites, and you know what it can be like in public housing: people stealing each others' curtains. The residents now store their outdoor things openly in their individual back yards: bicycles, barbecues, lawn chairs, tents. These yards are only separated from each other by low 3-foot fences. Yet nothing disappears. That's because everyone knows it would have to be an inside job. You can't get into the collective rear yard area from the outside

because of the high 6-foot fencing that encloses the collective of individual rear yards.

Peer group pressure among the residents was the key. We set up tenants to be leaders on each site. They were chosen at the orientation program by the tenants themselves. This was such an opportunity for all the residents; they knew they had to make it work. After they moved in, community meetings continued to play an important part in the acclimatization process. Residents kept encountering things they were not prepared for. They wanted to know how far they could go in assuming control of the grounds. There were complaints about neighbors misbehaving, parking on neighboring streets, police not responding quickly enough, [and] paint washing off the interior walls when they cleaned them. These community meetings were held in parking lots, peoples' apartments, and community rooms. Each of the seven sites had four or five meetings a year for the first 2 years: until things settled down. Now the meetings are fewer, and the big subject for them is, "When will we be able to buy our units?"

If drug dealing goes on in the scattered sites, it is not evident. It is not in-your-face as it is in the large projects in the southwest. A basic requirement of drug dealers is being able to blend in with the scenery, so the dealers can spot a cop before the cop spots them. There is no anonymity in the scattered-site projects and the bordering streets. If a resident chooses to sell drugs from his apartment, he becomes very vulnerable. If his neighbors see too much traffic to his house, they catch on. And he never knows who is going to drop a dime on him.

With the residents doing such a good job of maintaining their own grounds, upkeep of the nonprivate areas of the scattered sites becomes critically important. We can't do less of a job than they do. That's why it was important that we select a good maintenance man, one who would be conscientious and flexible. We are all learning our way in this thing.

The only thing I'd do differently is not design any of the sites with more than 20 to 24 units. I know we didn't have a choice:

God knows we struggled to get the seven sites we did. And at one time we did have 10 sites and so could have put fewer units on each. But the 2 big sites, with 48 units on 1 and 44 on the other, will come back to haunt us. They're too isolated from their surrounding communities. They are so big, they form their own place. They're not totally integrated into an overall community, not supervised by the surrounding middle-class residents. Down the road, I think we're going to see a difference in the way the big sites perform and in the kids that come out of them.

It was your modifications to the Clason Point public housing project that sold me on Defensible Space. It's not that the concept didn't make sense intuitively, but seeing how the residents there reacted to the opportunity, that's what convinced me. You know, for me the best test of the Defensible Space theory was not the way the residents took over their own grounds and then began to defend the entire project, I kind of expected that, but it is the way they take care of their garbage cans next to their front walks. I, frankly, didn't think that would work. Making garbage disposal an individual thing, and making it clear to the whole world that if there was a mess on their front yard, it was the tenants' own doing, brought something out of the tenants that showed the whole world how badly they had been prejudged.

I bump into residents on occasion when shopping. They are finding jobs in local stores. They don't always report that they are working though, they're afraid they'll have to pay more rent. A lot of people now have jobs in the local businesses and institutions—some admit it, somc don't. The residents' self-esteem really went up. I can't quantify it, but there is something special there, an amazing difference in their sclf-image. They seem so much more sure of themselves. Their kids share in that; they will do much better because of it.

When we held the lottery, only one-third of our existing tenants put their names on the list, that is 2,000 of our 6,000 households. There was apprehension in not knowing what sort of reception they would receive from their white suburban neighbors. But everybody in the authority has been following this closely, tenants and management, and if another lottery were held tomorrow, I know for a fact that 60 percent of our households would put their names on the list.

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Addendum A

Defensible Space Guidelines Used in Yonkers RFP

(This edited and shortened version of the original RFP speaks primarily to design guidelines concerning Defensible Space.)

Background

This is a request for proposals for the construction of public housing units for families with children, to be built on seven preselected sites in the eastern part of Yonkers. This housing is being built as a remedy to a Federal Court judgment. Both the City of Yonkers and the U.S. Department of Housing and Urban Development (HUD) have entered into Consent Decrees to further the construction of this housing. The sites have been acquired by the City of Yonkers. The Court has ordered the City to make them available at no cost for use by the turnkey developer selected to develop the public housing units. The selection will be made by the Yonkers Municipal Housing Authority (MHA) and approved by HUD.

Two-story townhouse dwelling units have been chosen as the most appropriate form of housing: (1) to best serve the future residents; and (2) to fit into the single-family residential character of the existing neighborhoods. The advantage of the townhouse design is that each unit is its own entity, belonging to one single family. It has its own front and back yard, and independent entrances serving only that family. The townhouse has no public circulation spaces—no lobbies, stairways, or corridors—which often create problems in low-income developments.

The cost of proposals that exceed HUD's Total Development Cost (TDC) guidelines (as found in Section C) will *not* be rejected by MHA for that reason alone; however, HUD has made no commitment that it will provide funds for any costs in excess of those cost guidelines, and accordingly, has reserved the right to reject any proposals exceeding

them. Sources of funds other than HUD's may be made available to provide for costs in excess of the cost guidelines.

Definitions

1. Townhouse Units:

A townhouse unit is a two-story house serving only one family. It shares common side walls with other townhouse units. Each townhouse will have its own entry front and rear and its own front and rear yard. Refer to the New York State Building Code for the maximum number of townhouse units that can be grouped together under different fire designations.

2. Units for the Handicapped:

A dwelling unit for the handicapped must be located entirely on the first floor level. It must be designed to the Uniform Federal Accessibility Standards. HUD requires that 5 percent of all units be provided for the handicapped per site.

3. Dwelling Units above Handicapped Units:

A second floor walkup dwelling unit will be permitted above the handicapped unit, but it must have a separate individual entrance at ground level. That is to say, the family living on the second floor is to have its own entry at street level which leads to a stair to the second floor. In MHA's definition there will be no interior areas common to more than one family.

4. Units for the Visually and Hearing Impaired:

HUD requires that in addition, 2 percent of all units be provided for the visually and hearing impaired. These units are to be designed to comply with the Public Housing Development Accessibility Requirements (Notice PIH 88-34) (attached to this RFP). These dwelling units shall be distributed among the sites as shown.

Selection of proposals

Proposals will be selected by MHA on the basis of free and open competition. Evaluation will be objectively conducted in accordance with the procedures and criteria set forth in the Proposal Evaluation Criteria, which follow later.

All proposals must comply with the project planning, design and cost criteria detailed in chapters 3, 6, 9, and 10 of the Public Housing Development Handbook and applicable cost containment and modest design requirements of HUD Notice PIH90–16 and Public Housing Cost Guidelines.

Zoning

The Federal District Court has ordered that all sites are deemed to be appropriately zoned for the housing called for in this RFP. The guidelines and constraints for the development of the sites are specified in the Design Criteria paragraph and Design Parameters. Developers are specifically asked to refer to the changes in the Yonkers Zoning Code allowed for in this RFP as regards to existing setback requirements and parking ratios.

Design criteria

1. Building Design

All buildings shall have pitched shingle roofs for drainage and aesthetic purposes.

In order to individualize the separate units, the Developer shall endeavor where possible, and in compliance with HUD's Cost Containment Guidelines, to employ visual breaks, changes in plane or roof line, and/or varied architectural expression (e.g. variation in window sizes, color, texture, etc.), especially in the development of the building elevations. The exterior walls shall have a brick veneer at the first story. The second story should be a maintenance free material.

2. Security:

Page 1 of HUD's Manual of Acceptable Practices cites two references for site design to achieve security: *Architectural Design for Crime Prevention* (U.S. Government Printing Office) and *Defensible Space* (Macmillan). Since security has become an increasingly important issue for public housing and for the communities that surround them, security should be given very serious consideration in the development of these site plans. The parameters to be used are as follows: The front yards, the fronts of buildings, and the main entries to units shall face existing streets or new driveways so as to facilitate normal patrolling by police cars and police response to residents' request for assistance. This will also enable residents across the street, whose units also face the street, to survey their neighbors front doors.

To the extent that the site will allow, the rear yards serving individual units should be backed onto the rear yards of other units so that a collective grouping of rear yards can be easily fenced off together using a collective 6'0" high fence. This will serve to create a collective private zone (consisting of a grouping of individual rear yards) that is inaccessible from the public street but accessible from the interior of each unit.

The amount of collective fencing needed to enclose the collective groupings of rear yard areas can be minimized through the judicious placement of buildings and rear yards.

3. Parking:

All parking areas are to be positioned a minimum distance of 10 feet from any building and should be positioned to facilitate surveillance from the units. Parking may be placed between the side walls of townhouse groupings as long as the nearest automobile space is not closer to the street than the front line of the building. Concrete wheel stops at curbs are to be provided at every parking space.

4. Walks:

Walks shall be provided for safe convenient direct access to each unit and for safe pedestrian circulation throughout a development between facilities and locations where major need for pedestrian access can be

anticipated. Walks shall be located so that they are easily surveyed from the interior of units.

5. Garbage and Refuse Storage:

Individual, outdoor garbage storage areas are to be provided and positioned to serve each dwelling unit. Inground garbage containers are the preferred solution by MHA and shall be designed to hold two garbage receptacles. The design treatment and construction of garbage and refuse stations and containers should prevent access to them by pests or animals.

6. Lighting:

Lighting is to be provided for the entire developed site with concentrations at walks, ramps, parking lots, and entrances to units. The intensity shall be 0.5 foot candles minimum for parking lots and walkways; and 4.0 foot candles for townhouse entrances, ramps, and steps. Parking lighting poles shall have a minimum height of 25'0" and pedestrian walk lighting poles a height of 12'0" to 15'0".

7. Planting:

Planting should not be placed so as to screen the doors and windows of dwelling units from the street or from walks leading from the street to dwelling unit entries.

Plant material should be selected and arranged to permit full safe sight distance between approaching vehicles at street intersections. Additional attention is required where driveways enter streets, at crosswalks and especially in areas of concentrated mixed pedestrian and vehicular movement. Planting that hides the pedestrian from the motorist until he steps out on the street should be avoided.

Selection of proposals

Proposals will be selected by the Municipal Housing Authority on the basis of free and open competition. Proposals will be evaluated objectively in accordance with the procedures and criteria set forth in HUD Handbook 7417.1 Rev. 1, dated October 1980, paragraphs 6–42 and 6–43, *as amended by this RFP,* as well as the following Evaluation Criteria.

In the event that all proposals are determined to be "nonresponsive," i.e., require major corrections in order to conform to the requirements of the RFP, MHA reserves the right to solicit a second round of proposals. Under this procedure, each developer will be informed of the reasons his/her proposal was determined nonresponsive, and be given an opportunity to submit a redesigned proposal, which may involve a higher price. If all resubmitted proposals are again found nonresponsive, MHA and HUD reserve the right to negotiate with the developer of the proposal considered most desirable to rectify deficiencies, permitting, if necessary, further increases in price.

After MHA has made its official announcement of designation, it will hold a meeting with those respondents who were not selected. This meeting will be held to review the rating, ranking, and selection process.

Proposal evaluation criteria

Proposals will be evaluated on a point system based on the four criteria below. The developer is asked to follow them as closely as possible.

A. Developer's price .... 20 points max.

The total developer's price as a percent of the median price for all responsive turnkey proposals.

Superior = below 90 percent of median

Average = 90–100 percent of median

Poor = more than 100 percent of median

B. Developer's qualifications .... 20 points max.

Previous experience in successfully developing and completing similar projects, perceived capability in completing this project, and financial viability.

C. Site development plan .... 40 points max.

(i) Site development layout
The extent to which the site development plan conforms to the Design Criteria regarding the layout of topography/grading, drainage, utility plan, streets, parking, slope stability, planting design, and open space development.
Maximum 15 points

(ii) Architectural treatment
The degree to which the exterior design of the dwelling units captures the scale, materials, and character of the neighborhood.
Maximum 15 points

(iii) Unit layout
The extent to which the dwelling unit floor plans and layout provides functional housing arrangements, allows residents to supervise activities in the streets, and allows the unit front entries and windows to be observed from the street.
Maximum 10 points

D. Design and construction quality .... 20 points max.

(i) Special design features
The degree to which the design incorporates features that provide for efficient project operations and lower maintenance costs.
Maximum 5 points

(ii) Energy-saving features
The extent to which the design provides for long-term energy savings by incorporating the use of energy conservation features.
Maximum 5 points

(iii) Material and equipment
The extent to which durable, low-maintenance, construction material and equipment will be used.
Maximum 5 points

(iv) Security
The extent to which the rear yards are backed onto other rear yards, so that a collective grouping of rear yards can be fenced off together. This will make the rear yards inaccessible from the public street but accessible from the interior of each dwelling.
Maximum 5 points

Total Maximum.......................... 100 points max.

Proposals will be evaluated based on the point system described above. The rating will be a gradation of 100 points spread among the four criteria. Ratings will be, (1) Superior (value 70 percent to 100 percentage points), Average (value 40 percent to 69 percentage points) and (3) Poor (value 0 to 39 percentage points), for each criteria. If only one proposal is submitted, the developer's price criteria will be rated against HUD's latest TDC for townhouse construction in Westchester County.

Addendum B

Tenant Training Course Conducted by Housing Education Relocation Enterprise

Tenants were given 2 hours of orientation and 2 hours of counseling in the following five subjects:

Tenant relocation

1. What are leases? Tenant responsibilities; landlord responsibilities?
2. What are the three phases of relocation?
3. What is the relocation schedule/timetable?
4. How do tenants prepare for the move?
5. How do tenants move?
6. How do tenants adapt to their new community?

Home maintenance

1. What do tenants need to know about their new housing units?
2. What do tenants need to know about their utilities?
    a) Telephone company (NYNEX, MCI, SPRINT)
    b) Washer/dryer (Manufacturer)
    c) Heating/air conditioning (CON-EDISON)
    d) Stove/refrigerator (Manufacturer)
3. What do tenants need to know about trash/garbage removal?

4. What do tenants need to know about parking?

5. What do tenants need to know about outdoor home recreation?

Interpersonal relations

1. What constitutes good tenant/landlord relations?

2. What constitutes good tenant/tenant relations?

3. What constitutes good tenant/neighbor relations?

4. What benefits do resident councils provide?

   a) Methods or organization

   b) Democratic processes

   c) Problem solving

   d) Conflict resolution

   e) MHA grievance procedure

Safety/security

1. What is the MHA evacuation plan?

2. What constitutes good police/community relations?

3. How does a tenant identify and properly utilize public health services?

   a) Department of public works

   b) Fire department

   c) City emergency services

   d) Ambulance/medical services

e) Hospitals/clinics

f) Night/neighborhood watch programs

Community resources

1. What family services are available to the tenants?

   a) Youth services

   b) Parks/recreation

   c) Libraries

   d) Cultural services

   e) Shopping centers

   f) Banking services

   g) Postal services

   h) Personal maintenance

2. Transportation

   a) Buses

   b) Trains

   c) Cabs/private transportation

3. Religious services